

FIFTH EDITION

UNDERSTANDING MOTIVATION AND EMOTION

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PREFACE

Welcome to the golden age of motivation and emotion. Never in its 100 years of formal study has the field been more exciting than it is today. Every month, new and important findings appear in the scholarly journals, and many of these findings make their way into the popular press. Every year, new scholars join those already studying motivation and emotion; so more people are interested in understanding motivation and emotion, and what they are discovering is proving to be both interesting and relevant to people's lives.

Just 20 years ago, this was not the case. The field was stagnant. But something changed in the 1990s. Creative ideas appeared, new theories emerged, life-changing applications became obvious, and the sheer number of people interested in understanding and applying motivation and emotion exploded. All this activity produced an enormous amount of new knowledge, and these advances opened up new areas of application in the home, at work, during sports and exercise, and in caring for people's health and well-being. As you read this text today, you are in the intellectual wake of what has been an explosion of new interest in motivation study. This means that now is the best possible time to take a course in motivation and emotion. Had you taken this same course 10 or 15 years ago, the field could not have offered you material that is as exciting and as meaningful as it is now. I hope this book helps you identify what we in the field are so terribly enthusiastic about.

In this book, you will find some of the most useful information in psychology and in life. Motivation is about human strivings, wants, desires, and aspirations—both your own, and the strivings and wants of those you care for, such as your future students, employees, and own children. Motivation study concerns all conditions that exist within the person and within the environment and culture that explain “why we want what we want” and “why we do what we do.”

By the end of the book, I hope you will feel comfortable with motivation study at two levels. First, theoretically, an understanding of motivation and emotion provides answers to questions such as, “Why did she do that?” “How does that work?” and “From where does the sense of ‘want to’ come?” Second, practically, an understanding of motivation and emotion provides the means to develop the art of motivating both self and others. Each chapter seeks to provide concrete answers to questions such as, “How do I motivate myself?” and “How do I motivate others?”

I assumed some background knowledge on the part of the reader, such as an introductory course in psychology. The intended audience is upper-level undergraduates enrolled in courses in a department of psychology. I also write for students in other disciplines, largely because motivation research itself reaches into so many diverse areas of study and application. Among these are domains of application in education, health, counseling, clinical, sports, industrial/organizational, and business. The book concentrates on human, rather than on nonhuman, motivation. It includes some experiments in which rats, dogs, and monkeys served as research participants, but the information gleaned from these studies is always framed within an analysis of human motivation and emotion.

WHAT'S NEW IN THE FIFTH EDITION

What's new in the fifth edition is also what's new in the field of motivation itself. Since the fourth edition, motivation study has expanded, diversified, and picked up many new allies. This growth has introduced a number of new theoretical perspectives and areas of application. The fourth edition stood out in the sheer number of new ideas it introduced, including achievement goals, personal strivings, types of extrinsic motivation, implementation intentions, personal empowerment, the adaptive unconscious, and so forth. What is new in the fifth edition is a concerted effort to expand these theoretical ideas further into practical applications, especially in the areas of education, work, therapy, sports, and the home, including parenting.

Each chapter features a chapter box that addresses a specific concern. For instance, the box in Chapter 3 uses the information on the motivated and emotional brain to understand how antidepressant drugs work. The box in Chapter 8 uses the information on goals to lay out a step-by-step goal-setting program that can be applied to many different objectives. At the end of each chapter, I list a number of recommended readings. These articles represent suggestions for further study. I selected these readings using four criteria: (1) its focus represents what is central to the chapter, (2) its topic appeals to a wide audience, (3) its length is short, and (4) its methodology and data analysis are reader-friendly.

INSTRUCTOR'S MANUAL/TEST BANK

For the fifth edition, I expanded the Instructor's Manual/Test Bank to include classroom discussion questions, recommended activities, brief demonstrations of motivational principles, and other tools to help instructors teach their students. Interested instructors should contact their Wiley representative for more information.

ACKNOWLEDGMENTS

Many voices speak within the pages of the book. Much of what I write emerged from conversations with colleagues and through my reading of their work. I have benefited from so many colleagues that I now find it impossible to acknowledge them all. Still, I want to try.

My first expression of gratitude goes to all those colleagues who, formally or casually, intentionally or inadvertently, knowingly or unknowingly, shared their ideas in conversation: Avi Assor, Roy Baumeister, Daniel Berlyne, Virginia Blankenship, Jerry Burger, Steven G. Cole, Mihaly Csikszentmihalyi, Richard deCharms, Ed Deci, Andrew Elliot, Wendy Grolnick, Hyunghim Jang, Alice Isen, Carroll Izard, Richard Koestner, Randy Larsen, Wayne Ludvigson, David McClelland, Henry Newell, Glen Nix, Brad Olson, Dawn Robinson, Tom Rocklin, Carl Rogers, Richard Ryan, Richard Solomon, Silvan Tomkins, Robert Vallerand, and Dan Wegner. I consider each of these contributors to be my colleague and kindred spirit in the fun and struggle to understand human strivings.

My second expression of gratitude goes to those who explicitly donated their time and energy to reviewing the early drafts of the book, including Debora R. Baldwin, Sandor B. Brent, Gustavo Carlo, Herbert L. Colston, Richard Dienstbier, Robert Emmons, Valeri Farmer-Dougan, Todd M. Freeberg, Eddie Harmon-Jones, Wayne Harrison, Carol

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I sincerely thank all the students I have had the pleasure to work with over the years. It was back at Ithaca College that I first became convinced that my students wanted and needed such a book. In a very real sense, I wrote the first edition for them. The students who occupy my thoughts today are those with me at the University of Iowa, here in Iowa City. For readers familiar with the earlier edition this fifth edition presents a tone that is decidedly more practical and applied. This balance comes in part from my daily conversations with students. Every chapter now presents both what motivation researchers know and also what students see as most worth learning.

Ithaca is doubly important to me, because it was in this beautiful town in upstate New York that I met Deborah Van Patten of Wiley (then Harcourt College Publishers). Deborah was every bit as responsible for getting this book off the ground as I was. Though 20 years have now passed, I still want to express my heartfelt gratitude to you, Deborah. The professionals at Wiley have been wonderful. Everyone at Wiley has been both a valuable resource and a source of pleasure, especially Jay O'Callaghan, Chris Johnson, Carrie Tupa, Danielle Torio Janet Foxman, Hope Miller, and Sarah Wilkin.

I am especially grateful for the advice, patience, assistance, and direction provided by my psychology editor Eileen McKeever. Thanks.

—*Johnmarshall Reeve*

To Richard Troelstrup, who introduced me to psychology.

To Edwin Guthrie, who first interested me in psychology.

To Steven Cole, who mentored me so I could participate in this wonderful profession.

Chapter 1

Introduction

MOTIVATIONAL SCIENCE

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Motivation Includes Both Approach and Avoidance Tendencies

Motivation Study Reveals What People Want

To Flourish, Motivation Needs Supportive Conditions

There Is Nothing So Practical as a Good Theory

PUTTING IT ALL TOGETHER: A FRAMEWORK TO UNDERSTAND THE STUDY OF MOTIVATION

SUMMARY

What is motivation? What is emotion? One reason to read this book is, of course, to find answers to these questions. But as a way of beginning the journey, pause for a moment and generate your own answers to these two questions, however preliminary,

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however tentative, however personal and private. Perhaps scribble your definitions on a notepad or in the margins of this book.

Your effort to define motivation and emotion will likely begin with the choice of a noun inserted into the following blank space: “Motivation is a ____.” Is motivation a desire? a feeling? a way of thinking? a process, or a set of processes? a striving? a need, or a collection of needs? On page eight, the text offers a definition with which almost everyone who studies motivation would agree (see “Subject Matter” section). On page nine, the text offers a definition of emotion (see “Internal Motives” section). As you progress through the pages of this book, your definitions for motivation and emotion will grow in clarity and sophistication. With ever-growing clarity and understanding, you will become increasingly able to understand motivational and emotional phenomena and explain how they work. You will also become increasingly able to support motivational strivings in yourself and in others.

But the journey to understand motivation and emotion can be a long one. Since it is a long journey, pause for a moment and ask yourself why someone might want to take the journey in the first place. Why read these pages? Why ask questions in class? Why go online to read motivation-related articles? Why stay up until 2:00 in the morning pondering questions of human motivation? Consider two reasons.

First, learning about motivation is an interesting thing to do. Few topics spark and entertain the imagination so well. Anything that tells us about who we are, why we want what we want, and how we can improve our lives is going to be interesting. And anything that tells us about what other people want, why they want what they want, and how we can improve their lives is also going to be interesting. When trying to explain why people do what they do, we can turn to theories of motivation to learn about topics such as human nature, strivings for achievement and power, desires for biological sex and for psychological intimacy, emotions like fear and anger, cultivating talent and promoting creativity, developing interests and growing competencies, and making plans and setting goals.

Second, few topics are more useful to our lives. Motivation is important for its own sake, but it is further important because of its capacity to foreshadow those life outcomes that we care deeply about, including the quality of our performances and our well-being. So learning about motivation can be an extremely practical and worthwhile undertaking. It can be quite useful to know from where motivation comes, why it sometimes changes and why other times it does not, under what conditions motivation increases or decreases, what aspects of motivation can and cannot be changed, and which of these types of motivation produce engagement and well-being and which types do not. Knowing such things, we can apply our knowledge to situations such as trying to motivate employees, coach athletes, counsel clients, raise children, tutor students, or change our own ways of thinking, feeling, and behaving. To the extent that a study of motivation can tell us how we can improve our lives and the lives of others, the journey to learn about motivation will be time well spent.

Studying motivation provides an opportunity to gain both theoretical understanding and practical know-how. As a case in point, consider exercise. Think about it for a moment: Why would anyone *want* to exercise? Can you explain such motivation? Can you explain where the motivation to exercise comes from? Do you understand why people might be more willing to exercise under some conditions yet less willing to do so

under other conditions? Can you offer any constructive suggestions to increase people's motivation to exercise? If someone hated to exercise, could you intervene in such a way that he or she would truly want to exercise? These questions ask about exercise, but they could just as easily be about the motivation underlying almost any activity. If you play the piano, why do you do so? If you are fluent in a second language, why did you go through all the effort to learn that foreign language? If you spent the afternoon working hard to learn something new or developing a particular talent, then why?

As to exercise, why run laps around a track? Why jump up and down during an aerobics class? Why climb stairs on a machine that does not really go anywhere? Why walk briskly in the park, or swim laps in a pool? Why run when you know your lungs will collapse for want of air? Why jump and stretch when you know your muscles will rip and tear? Why take an hour out of the day for a brisk walk when you just do not feel like it or when your schedule will not allow it? Why muster together all the energy and effort you will need to overcome the sheer inertia of inactivity? Why exercise when life offers so many other interesting things to do?

MOTIVATIONAL SCIENCE

Fourteen different motivation-based reasons to exercise appear in Table 1.1. Who is to say which of these reasons are valid and which other reasons are erroneous? In answering a question such as, Why exercise?, a person can rely on personal experience and subjective conjectures to generate an answer. This is a fine starting point, but the study of motivation and emotion is a behavioral science. The term *science* signals that answers to motivational questions require objective, data-based, empirical evidence gained from well-conducted and peer-reviewed research findings. Motivational science does not accept quotes from famous basketball coaches as definitive answers, however inspirational and attention-getting those quotes may be. Instead of relying on personal insights, research on motivation and emotion seeks to construct theories about how motivational processes work. It is from these theories of motivation and emotion that hypotheses can be generated and put to objective empirical test so as to assess their scientific merit. The on-going processes of holding up one's ideas about motivation to empirical test is a crucial process to realizing the title of this book (i.e., *Understanding Motivation and Emotion*), because the motivational concepts one uses need to be chosen carefully and they need to be continually evaluated against new findings. Inadequate concepts are best tossed aside, useful concepts need to be made better, and new concepts need to be discovered.

A theory is an intellectual framework that can be used to identify and explain the relationships that exist among naturally occurring, observable phenomena (Fiske, 2004). Figure 1.1 illustrates the function and utility of a good theory (Trope, 2004). Theories help motivation researchers understand the complex phenomena they study, such as exercise motivation and behavior ("representation" in Figure 1.1), and theories allow for the generation of testable hypotheses. It is through the collection of hypothesis-confirming data that a theory can gain support. Once validated, theories become a fruitful ground to recommend practical applications that can improve people's lives ("application" in Figure 1.1).

For instance, in trying to understand why people exercise, a motivation researcher might ask any or all of the following questions: Do people who set a goal to exercise

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Table 1.1 Motivational Reasons to Exercise

Why Exercise?	Source of Motivation	Illustration
Fun, enjoyment	Intrinsic motivation	Children exercise spontaneously—they run and jump and chase, and they do so simply for the sheer fun of it.
Personal challenge	Flow	Athletes get “in the zone” when their sport optimally challenges their skills.
Forced to do so	External regulation	Students exercise because their coach tells them to do so.
Paid to do so	Extrinsic motivation	A coach or instructor is paid to exercise and to help others exercise.
Accomplish a goal	Goal	Runners see if they can run a mile in six minutes or less.
Health benefits	Value	People exercise to lose weight or to strengthen the heart.
Inspired to do so	Possible self	People watch others exercise and become inspired to do the same.
A standard of excellence	Achievement strivings	Snow skiers race to the bottom of the mountain trying to beat their previous best time.
Satisfaction from a job well done	Perceived competence	As exercisers make progress, they feel more competent, more effective.
An emotional kick	Opponent process	Vigorous jogging can produce a runner’s high (a rebound to the pain).
Good mood	Positive affect	Beautiful weather can pick up exercisers’ moods and invigorate exercise spontaneously, as they skip along without knowing why.
Alleviate guilt	Introjection	People exercise because they think that is what they should, ought to, or have to do to feel good about themselves.
Relieve stress, silence depression	Personal control	After a stressful day, people go to the gym, which they see as a structured and controllable environment.
Hang out with friends	Relatedness	Exercise is often a social event, a time simply to enjoy hanging out with friends.

actually exercise more than do people who do not set such a goal? Does exercise really relieve stress, reduce depression, provide a sense of accomplishment, or produce a “runner’s high”? If exercise produces any of these effects, then under what conditions does it do so? Each of these questions needs to be put to scientific test. Hypothesized answers to these questions can be supported or disconfirmed through research findings. It is from these research findings that motivation researchers develop a deep understanding of motivation and emotion (i.e., gain theoretical knowledge), and it is through these research findings that motivation researchers develop workable solutions to motivational problems (i.e., gain practical know-how). As a case in point, one group of motivation researchers went to eight high schools to ask adolescents why they exercised. Students said they

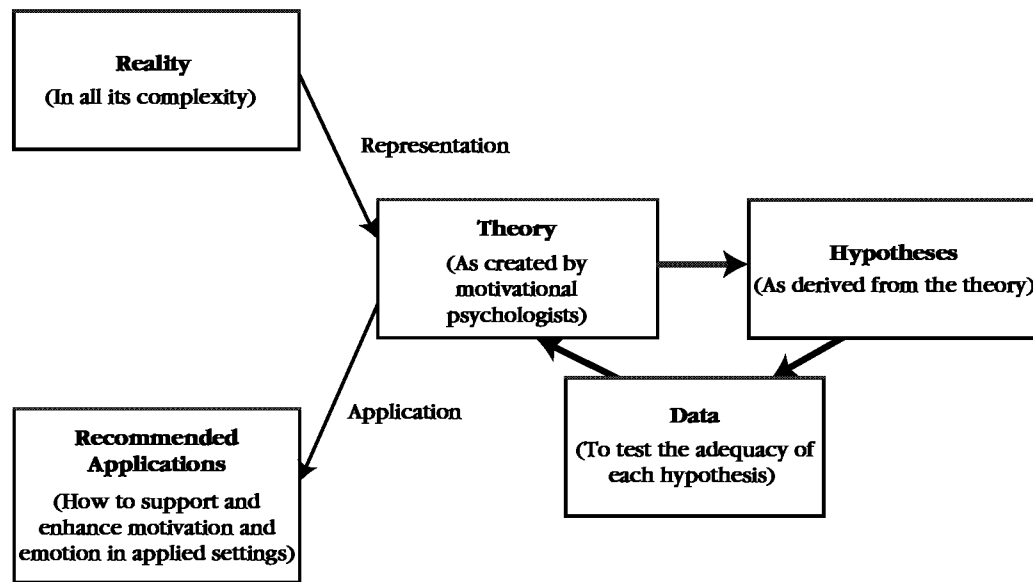


Figure 1.1 Illustration of a Theory

exercised mostly because it was fun, valued, and a way to feel competent about themselves (Ntoumanis, 2005). These researchers then recommended that the schools consider redesigning their physical education classes to feature students' preferred sports (to promote intrinsic motivation) to provide information about exercise's health benefits (to promote valuing), and to help teachers develop a motivating style to support students' progress and improvement (to promote competence).

TWO PERENNIAL QUESTIONS

The study of motivation revolves around providing the best possible answers to two fundamental questions: (1) What causes behavior? and (2) Why does behavior vary in its intensity?

What Causes Behavior?

Motivation's first fundamental question is, "What causes behavior?" Or, stated differently, "Why did she do that?" and "Why does he seek out a particular thing at a particular time?" We see people behave, but we cannot see the underlying cause or causes that generated their behavior. We watch people show great effort and persistence (or none at all), but the reasons why they seek things out and show great effort and persistence while doing so remain unobserved. Motivation exists as a scientific field to answer this question.

To really explain "What causes behavior?" we need to expand this one general question into a series of five specific questions:

- Why does behavior start?
- Once begun, why is behavior sustained over time?

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- Why is behavior directed toward some goals yet away from others?
- Why does behavior change its direction?
- Why does behavior stop?

In the study of motivation, it is not enough to ask why a person practices a sport, why a child reads books, or why an adolescent refuses to sing in the choir. To gain a sophisticated understanding of why people do what they do, we must also ask why athletes begin to practice in the first place. What energizes their effort hour after hour, day after day, season after season? Why do these athletes practice one particular sport rather than another? Why are they practicing now rather than, say, hanging out with their friends? When they do practice, why do these athletes quit for the day, or quit during their lifetimes? These same questions can be asked of children as they read books: Why begin? Why continue reading past the first page? Past the first chapter? Why pick that particular book rather than one of the other books sitting on the shelf? Why stop reading? Will their reading continue in the years to come? For a personal example, let me ask, Why did you begin to read this book today? Will you continue reading to the end of this chapter? Will you continue reading until the end of the book? If you do stop before the end, at what point will you stop? Why will you stop? After reading, what will you do next? Why?

Motivation's first perennial question—What causes behavior?—can, therefore, be elaborated into the study of how motivation affects behavior's initiation, persistence, change, goal directedness, and eventual termination. This question is either one grand question, or it is five interrelated questions. Either way, the first essential problem in a motivational analysis of behavior is to understand how motivation participates in, influences, and helps explain a person's ongoing stream of behavior. Importantly, motivation and emotion influence more than just behavior. Motivation and emotion also influence our thoughts, our feelings, and our dreams and aspirations. So, there is some wisdom in expanding the question, "What causes behavior?", to a more general question of, "What causes activity—no only our behavior, but also our thoughts, our feelings, and our dreams?"

Why Does Behavior Vary in Its Intensity?

Motivation's second fundamental question is, "Why does behavior vary in its intensity?" Other ways of asking this same question would be to ask, "Why is desire strong and resilient at one time yet weak and fragile at another time?" and "Why does the same person choose to do different things at different times?" Behavior varies in its intensity, and its intensity varies both within the individual and between different individuals. The idea that motivation can vary within the individual means that a person can be actively engaged at one time, yet that same person can be passive and listless at another time. The idea that motivation can vary between individuals means that, even in the same situation, some people can be actively engaged while others are passive and listless.

Within the individual, motivation varies. When motivation varies, behavior also varies, as people show high or low effort and their persistence is strong or fragile. Some days an employee works rapidly and diligently; other days the work is lethargic. One day a student shows strong enthusiasm, strives for excellence, and shows determined

BOX 1

goal-directed striving; yet the next day, the same student is listless, does only the minimal amount of work, and avoids being challenged academically. Why the same person shows strong and persistent motivation at one time yet weak and unenthusiastic motivation at another time needs to be explained. Why does the worker perform so well on Monday but not on Tuesday? Why do children say they are not hungry in the morning, yet the same children complain of urgent hunger in the afternoon? So the second essential problem in a motivational analysis of behavior is to understand why a person's behavior varies in its intensity from one moment to the next, from one day to the next, and from one year to the next.

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Between different people, motivation varies. We all share many of the same basic motivations and emotions (e.g., hunger, anger), but people do clearly differ in what motivates them. Some motives are relatively strong for one person yet relatively weak for another. Why is one person a sensation seeker, who continually seeks out strong sources of stimulation, such as riding a motorcycle, whereas another person is a sensation avoider, who finds such strong stimulation more of an irritant than a source of excitement? In a contest, why do some people strive diligently to win, whereas others care little about winning and strive more to make friends? Some people seem so easy to anger, whereas others rarely get upset. For those motives in which wide individual differences exist, motivation study investigates how such differences arise and what implications they hold. So another motivational problem to solve is to recognize that individuals differ in what motivates them and to explain why one person shows intense behavioral engagement in a given situation while another does not.

SUBJECT MATTER

To explain why people do what they do, we need a theory of motivation. The point of a motivation theory is to explain what gives behavior its energy and its direction. It is some motive that energizes the athlete, and it is some motive that directs the student's behavior toward one particular goal rather than another. *The study of motivation concerns those processes that give behavior its energy and direction.* Energy implies that behavior has strength—that it is relatively strong, intense, and persistent. Direction implies that behavior has purpose—that it is aimed or guided toward achieving some particular goal or outcome. It is the responsibility of a theory to explain what those motivational processes are and also how they work to energize and direct a person's behavior.

The processes that energize and direct behavior emanate from forces in the individual and in the environment, as shown in Figure 1.2. Motives are internal experiences—needs, cognitions, and emotions—that energize the individual's approach and avoidance tendencies. External events are environmental, social, and cultural offerings that attract or repel the individual to engage or to not engage in a particular course of action.

Internal Motives

A motive is an internal process that energizes and directs behavior. It is therefore a general term to identify the common ground shared by needs, cognitions, and emotions. The difference between a motive versus a need, cognition, or emotion is simply the level of analysis. Needs, cognitions, and emotions are just three specific types of motives (see Figure 1.2).

Needs are conditions within the individual that are essential and necessary for the maintenance of life and for the nurturance of growth and well-being. Hunger and thirst exemplify two biological needs that arise from the body's requirement for food and water. Food and water are both essential and necessary for biological maintenance, well-being, and growth. Competence and belongingness exemplify two psychological needs that arise from the self's requirement for environmental mastery and warm interpersonal relationships. Competence and belongingness are both essential and necessary for psychological maintenance, well-being, and growth. Needs serve the organism, and they do so by

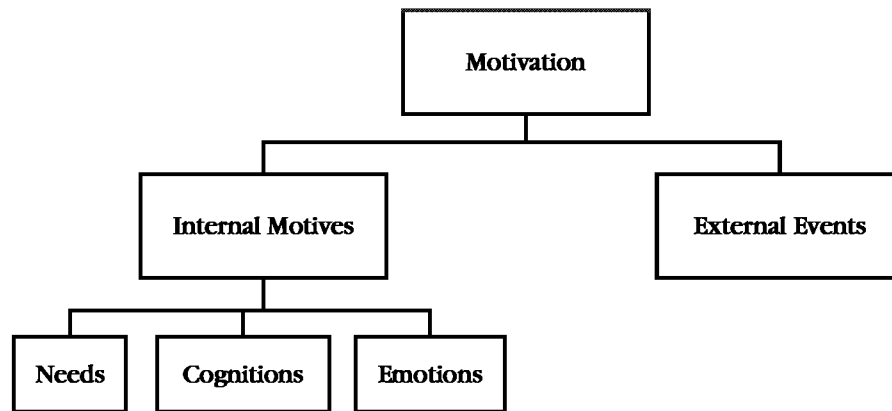


Figure 1.2 Hierarchy of the Four Sources of Motivation

generating wants, desires, and strivings that motivate whatever behaviors are necessary for the maintenance of life and the promotion of well-being and growth. Part I discusses specific types of needs: physiological need (Chapter 4), psychological needs (Chapter 6), and social needs (Chapter 7).

Cognitions refer to mental events, such as thoughts, beliefs, expectations, and the self-concept. Cognitive sources of motivation revolve around the person's ways of thinking. For instance, as students, athletes, or salespersons engage in a task, they have in mind some plan or goal, they hold beliefs about their abilities, they harbor expectations for success and failure, they have ways of explaining their successes and failures, and they have an understanding of who they are and who they are striving to become. Part II discusses specific cognitive sources of motivation: plans and goals (Chapter 8), beliefs and expectations (Chapter 9), and the self (Chapter 10).

Emotions are short-lived subjective–physiological–functional–expressive phenomena that orchestrate how we react adaptively to the important events in our lives. That is, emotions organize and orchestrate four interrelated aspects of experience:

- *Feelings*—subjective, verbal descriptions of emotional experience.
- *Physiological preparedness*—how our body physically mobilizes itself to meet situational demands.
- *Function*—what specifically we want to accomplish at that moment.
- *Expression*—how we communicate our emotional experience publicly to others.

By orchestrating these four aspects of experience into a coherent pattern, emotions allow us to anticipate and to react adaptively to the important events in our lives. For instance, when we face a threat to our well-being, we feel afraid, our heart rate increases, we desire to escape, and the corners of our lips are drawn backward in such a way that others can recognize and respond to our experience. Other emotions, such as anger and joy, show similar coherent patterns that organize our feelings, preparedness, function, and expression in ways that allow us to cope successfully with the circumstances we face. Part III discusses the nature of emotion (Chapter 11), as well as its different aspects (Chapter 12).

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External Events

External events are environmental, social, and cultural sources of motivation that have the capacity to energize and direct behavior. Environmental sources of motivation exist as specific stimuli (money) or events (being praised). Environmental sources of motivation also exist as general situations and surrounding climates (e.g., classroom climates, parenting styles), or as the culture in which one lives. The environmental incentive of offering money often acts as an incentive for energized approach behavior, while the environmental event of an unattractive odor often acts as an incentive for energized avoidance behavior. The external event (money, odor) gains the capacity to energize and direct behavior to the extent that it signals that a particular behavior will likely produce rewarding or punishing consequences. So external incentives precede behavior and functionally pull approach behavior out of the person or functionally push avoidant behavior out of the person. Chapter 5 discusses how environmental events and larger social and cultural contexts add to a motivational analysis of behavior.

EXPRESSIONS OF MOTIVATION

In addition to identifying motivation's perennial problems and its subject matter, one more introductory task remains—namely, specifying how motivation expresses itself. In other words, How can you tell when someone is motivated? Or is not motivated? Or is only a little bit motivated? Or is motivated toward one thing rather than another? All people are motivated, so we first need to reframe the question as, How can you tell the quality (or type) and the quantity (or amount) of another person's motivation? For instance, as you watch two people—say, two teenagers playing a tennis match—how do you know that one person is more motivated than is the other? How do you know whether one player harbors a higher quality of motivation than does the other?

Motivation is a private, unobservable, and seemingly mysterious experience. You cannot see another person's motivation. That is, as you walk down the street, you cannot look at passersby and see their thirst, goals, or extent of achievement motivation. Instead, we can observe what is public and observable and monitor this information to infer such motivations.

Two ways exist to infer motivation in another person. The first way is to observe motivation's behavioral manifestations. To infer hunger, for instance, we watch to see whether Joe eats more quickly than usual, chews vigorously, talks about eating during conversation, and forgoes social manners for the opportunity to eat. Behaving quickly, vigorously, and narrowly implies that some force must be energizing and directing Joe's consummatory behavior. The second way to infer motivation is to pay close attention to the antecedents known to give rise to motivational states. After 72 hours of food deprivation, a person will be hungry. After feeling threatened, a person will feel fear. After winning a competition, a person will feel competent. Food deprivation reliably leads to hunger, a threat appraisal reliably leads to fear, and objective messages of effectance reliably lead to feeling competent. When we know the antecedents to a person's motivation, we can predict people's motivational states in advance, and we can do so rather confidently. But these antecedents are not always knowable. More often than not, motivation must be inferred from its expressions via the person's behavior, engagement, physiology, and self-report.

Behavior

Eight aspects of behavior express the presence, intensity, and quality of motivation (Atkinson & Birch, 1970, 1978; Bolles, 1975; Ekman & Friesen, 1975): attention, effort, latency, persistence, choice, probability of response, facial expressions, and bodily gestures. The eight aspects of behavior shown in Table 1.2 provide the observer with data to infer the presence and intensity of another person's motivation. When behavior shows on-task attention, intense effort, short latency, long persistence, high probability of occurrence, facial or gestural expressiveness, or when the individual pursues a specific goal-object in lieu of another, such is the evidence to infer the presence of a relatively intense motive. When behavior is occasionally off-task and shows lackadaisical effort, long latency, fragile persistence, low probability of occurrence, minimal facial and gestural expressiveness, or the individual pursues an alternative goal-object, such is the evidence to infer an absence of a motive or at least a relatively weak motive.

Engagement

Engagement refers to the behavioral intensity, emotional quality, and personal investment in another person's involvement during an activity (Fredricks, Blumenfeld, & Paris, 2004; Halusic, Tseng, & Reeve, 2008; Wellborn, 1991). To monitor another's engagement, one needs to keep track of that person's behavior, emotion, cognition, and voice, as summarized in Figure 1.3. Behavioral engagement represents the extent to which the person displays on-task attention, effort and enduring persistence (i.e., the behavior discussed in the preceding paragraph). Emotional engagement expresses the extent to which the person's activity is characterized by positive emotion, such as interest and enjoyment, rather than by negative emotion, such as sadness or anger. Cognitive engagement expresses the extent to which the person actively monitors how well things are going and uses sophisticated learning and problem-solving strategies. Voice expresses the extent to which the person expresses the needs, preferences, and desires of the self and seeks to change one's environmental circumstances for the better. For one example, to infer the

Table 1.2 Behavioral Expressions of Motivation

Attention	Concentration and on-task focus.
Effort	Exertion put forth while trying to accomplish a task.
Latency	The time a person delays a response following an initial exposure to a stimulus event.
Persistence	The time between the initiation of a response until its cessation.
Choice	When presented with two or more courses of action, showing a preference for one course of action over the other.
Probability of response	Given a number of different opportunities for the behavior to occur, the number (or percentage) of occasions that particular goal-directed response occurs.
Facial expressions	Facial movements, such as wrinkling the nose, raising the upper lip, and lowering the brow (e.g., a disgusted facial expression).
Bodily gestures	Bodily gestures like posture, weight shifts, and the movements of the legs, arms, and hands (e.g., a clenched fist).

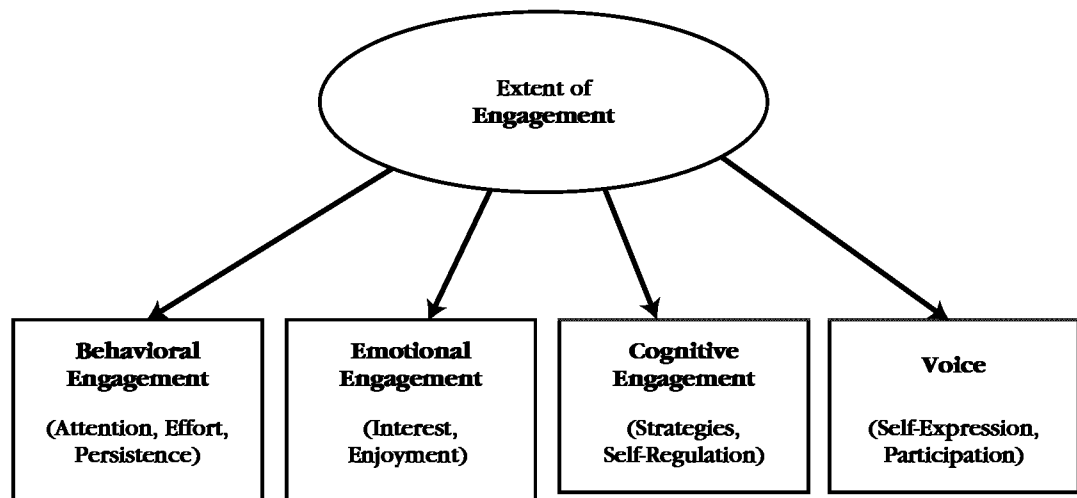


Figure 1.3 Four Interrelated Aspects of Engagement

underlying motivation of the student who sits next to you during class, observe his or her attention and effort (behavioral engagement), interest and enjoyment (emotional engagement), deep processing and monitoring of how things are going (cognitive engagement), and verbal participation in and contribution to the lesson (voice). These four aspects of engagement are all positively intercorrelated, and they collectively communicate the underlying and moment-to-moment status of the person's motivation during an activity.

Brain Activations and Physiology

As people and animals prepare to engage in various activities, brain sites become activated and the nervous and endocrine systems manufacture and release various chemical substances (e.g., neurotransmitters, hormones) that provide the biological underpinnings of motivational and emotional states (Andreassi, 1986; Coles, Ponchin, & Porges, 1986). In the course of a public speech, for example, speakers experience acute emotional stress to various degrees, and that emotionality manifests itself physiologically through a rise in plasma catecholamines (e.g., adrenaline; Bolm-Avdorff, Schwammle, Ehlenz, & Kafarnik, 1989). To measure such neural and hormonal changes, researchers use blood tests, saliva tests, psychophysiological equipment, and machines that observe neural activity in the brain (e.g., positron emission tomography, or PET scan). Using these measures, motivation researchers monitor a person's brain activity, hormonal activity, heart rate, blood pressure, respiratory rate, pupil diameter, skin conductance, skeletal muscle activity, and other indices of physiological functioning to infer the presence and intensity of underlying motivational and emotional states, as listed in Table 1.3.

Self-Report

A fourth way to collect data to infer the presence, intensity, and quality of motivation is simply to ask. People can typically self-report their motivation, as in an interview or on a questionnaire. An interviewer might assess anxiety, for instance, by asking how

Table 1.3 Brain and Physiological Activity as Expressions of Motivation

Brain activity	Activation of brain structures such as the amygdala (fear) or prefrontal cortex (setting goals).
Hormonal activity	Chemicals in saliva or blood, such as cortisol (stress) or catecholamines (fight-or-flight reaction).
Cardiovascular activity	Contraction and relaxation of the heart and blood vessels (attractive incentives, difficult/challenging tasks).
Ocular activity	Eye behavior—pupil size (extent of mental activity), eye blinks (changing cognitive states), and eye movements (reflective thought).
Electrodermal activity	Electrical changes on the surface of the skin (expression of threat or stimulus significance).
Skeletal activity	Activity of the musculature, as with facial expressions (specific emotion) and bodily gestures (desire to leave).

anxious the interviewee feels in particular settings or by asking the interviewee to report anxiety-related symptoms, such as an upset stomach or thoughts of failure. Questionnaires have several advantages. They are easy to administer, can be given to many people simultaneously, and can target very specific information (Carlsmith, Ellsworth, & Aronson, 1976). But questionnaires also have pitfalls that raise a red flag of caution as to their usefulness. Many researchers lament the lack of correspondence between what people say they do and what they actually do (Quattrone, 1985; Wicker, 1969). Furthermore, there is also a lack of correspondence between how people say they feel and what their psychophysiological activity indicates they probably feel (Hodgson & Rachman, 1974; Rachman & Hodgson 1974). Hence, what people say their motives are sometimes are not what people's behavioral and physiological expressions suggest their motives are. What conclusion, for instance, can one draw when a person verbally reports low anger but shows a quick latency to aggress, a rapid acceleration in heart rate, and eyebrows that are drawn tightly downward and together? Because of such discrepancies, motivation researcher typically trust and rely on behavioral, engagement, and physiological measures to a greater degree than they trust and rely on self-report measures.

THEMES IN THE STUDY OF MOTIVATION

Motivation study includes a wide range of assumptions, hypotheses, theories, findings, and domains of application, as you will see in the chapters to come. But motivation study also has a number of unifying themes that integrate these assumptions, hypotheses, theories, findings, and applications into a coherent field of study, including the following:

- Motivation benefits adaptation.
- Motives direct attention and prepare action.
- Motives vary over time and influence the ongoing stream of behavior.
- Types of motivations exist.
- Motivation includes both approach and avoidance tendencies.
- Motivation study reveals what people want.

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- To flourish, motivation needs supportive conditions.
- There is nothing so practical as a good theory.

Motivation Benefits Adaptation

Circumstances constantly change, as do the environments we live in (at home, school, work). Demands on our time rise and fall, opportunities come and go, and supportive relationships sometimes take a turn for the worse. Facing an ongoing and changing stream of opportunities and threats, people need the means to take the corrective action needed that can preserve and enhance their well-being. Motivations and emotions provide tremendous resources that allow people to adapt to these environmental changes.

When people go for hours without food and when food supply is scarce, hunger arises. When deadlines become too numerous, stress arises. When a person gains control over a difficult problem, a sense of mastery and competence arises. Changes in hunger, stress, and mastery motivation allow people to become complex adaptive systems. Therefore, one theme that runs throughout this book is that motivational states (e.g., hunger, stress, mastery) provide a key means for individuals to cope successfully with life's inevitable, changing, and somewhat unpredictable demands. Take away the motivational states, and people would quickly lose a vital resource they rely on to adapt and to maintain well-being. Anyone who tries to lose weight, write a creative poem, or learn a foreign language without first recruiting motivation will quickly realize that motivation benefits adaptation. The lesson we learn from such an undertaking is that motivation readies and allows us to lose weight, perform creatively, and learn complex skills.

When motivation sours, personal adaptation suffers. People who feel helpless in exerting control over their fates tend to give up quickly when challenged (Peterson, Maier, & Seligman 1993). Helplessness sours the person's capacity to cope with life's challenges. People who are bossed around, coerced, and controlled by others tend to become emotionally flat and numb to the hopes and aspirations embedded within their inner psychological needs (Deci, 1995). Being controlled by others sours the person's capacity to generate motivation of his or her own. In contrast, when students are excited about school when workers are confident in their skills, and when athletes set higher goals, then their teachers, supervisors, and coaches can rest assured each of these persons will be able to adapt successfully to his or her unique environment. People with high-quality motivation adapt well and thrive; people with motivational deficits flounder.

Motives Direct Attention and Prepare Action

Environments constantly demand our attention, and they do so in a multitude of ways. Just driving down the road, for instance, we have many things to do—find our destination, cooperate with other drivers, avoid hitting other cars, listen and respond to our passengers' conversation, avoid spilling our coffee, and so forth. Similarly, a college student must simultaneously make good grades, maintain old friendships, eat healthy, balance budgets of money and time, plan for the future, wash clothes, develop artistic talents, keep abreast of world news, and so on. Who is to say whether our attention is allocated in one direction or the other? Much of that "say" comes from our motivational states. Motives have a way of gaining, and sometimes demanding, our attention so that we attend to one aspect of the environment rather than to another.

Motives affect behavior and prepare us for action by directing attention to select some behaviors and courses of action over others, as illustrated in Table 1.4. The table's four columns list, from left to right, (1) various aspects of the environment, (2) a motive typically aroused by that environmental event, (3) a motive-appropriate course of action, and (4) a hypothetical priority given to each course of action as determined by the intensity of its associated motive. While six courses of action are possible, attention is not allocated equally because the aroused motives vary in strength (as denoted by the number of asterisks in the far-right column). Because interest, thirst, and rest are not urgent at that particular time (one asterisk), their salience is low and they fail to grab attention. The motive to avoid a headache's pain is highly salient (five asterisks) and therefore a strong candidate to grab attention and channel behavior toward taking an aspirin. Pain, like many motives, has an intrinsic ability to grab, hold, and direct our attention (Bolles & Fanselow, 1980; Eccleston & Crombez, 1999). Motives, therefore, influence behavior by capturing attention, interrupting what we are doing, distracting us from doing other things, and imposing a priority onto our thinking, feeling, and behaving.

Motives Vary Over Time and Influence the Ongoing Stream of Behavior

Motivation is a dynamic process—a ways changing, always rising and falling—rather than a discrete event or static condition. It is helpful to think of motivation as a constantly flowing river of needs, cognitions, and emotions. Not only do motive strengths continually rise and fall, but people always harbor a multitude of different motives at any one point in time. Typically, one motive is strongest and most situationally appropriate, while other motives are relatively subordinate (i.e., one motive dominates our attention, while others lie relatively dormant, as in Table 1.4). The strongest motive typically has the greatest influence on our behavior, but each subordinate motive can become dominant as circumstances change and can therefore influence and contribute to the ongoing stream of behavior.

As an illustration, consider a typical study session in which a student sits at a desk with book in hand. Our scholar's goal is to read the book, a relatively strong motive on this occasion because of an upcoming examination. The student reads for an hour, but during this time, curiosity becomes satisfied, fatigue sets in, and various subordinate motives—such as hunger and affiliation—begin to increase in strength. Perhaps the smell

Table 1.4 How Motives Influence Behavior for a Student Sitting at a Desk

Environmental Event	Aroused Motive	Motive-Relevant Course of Action	Motive's Urgency Attention-Getting Status
Book	Interest	Read chapter.	*
Cola	Thirst	Drink beverage.	*
Familiar voices	Affiliation	Talk with friends.	***
Headache	Pain avoidance	Take aspirin.	*****
Lack of sleep	Rest	Lie down, nap.	*
Upcoming competition	Achievement	Practice skill.	**

Note: The number of asterisks in column four represents the intensity of the aroused motive. One asterisk denotes the lowest intensity level, while five asterisks denote the highest intensity level.

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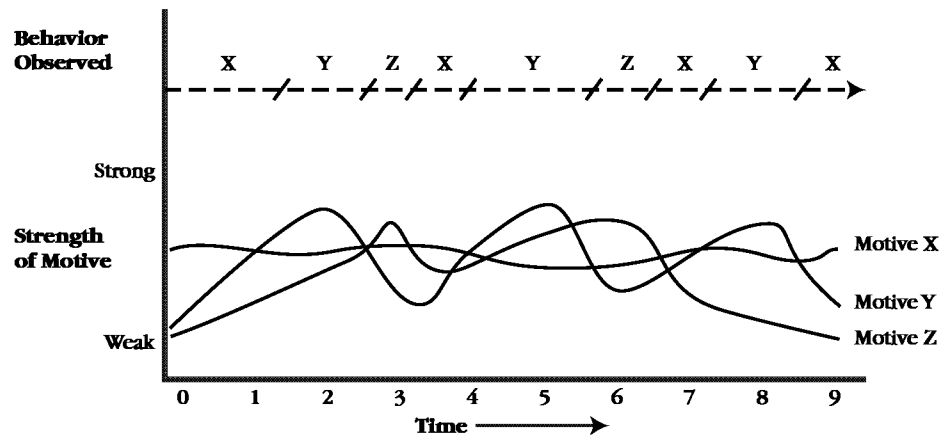


Figure 1.4 Stream of Behavior and the Changes in the Strength of Its Underlying Motives

Source: Adapted from *Cognitive Control of Action*, by D. Brehm, J. W. Atkinson, and K. Bongort, in B. Weiner's (Ed.), *Cognitive View of Human Motivation* (pp. 71–84), 1974, New York: Academic Press.

of popcorn from a neighbor's room make its way down the hallway, or perhaps the sight of a close friend passing the door increases the relative strength of an affiliation motive. If the affiliation motive increases in strength to a dominant level, then our scholar's stream of behavior will shift direction from studying to affiliating.

An ongoing stream of behavior in which a person performs a set of three behaviors, X, Y, and Z (e.g., studying, eating, and affiliating; Atkinson, Bongort, & Price, 1977) appears in Figure 1.4. The figure plots the changes in the strength of each of these three motives that produce the observed stream of behavior. At time one, motive X (studying) is the dominant motive, while motives Y and Z are relatively subordinate. At time two, motive Y (eating) has increased in strength above motive X, while motive Z remains subordinate. At time three, motive Z (affiliating) gains relative dominance and exerts its influence on the stream of behavior. Overall, Figure 1.4 illustrates that (a) motive strengths change over time, (b) people forever harbor a multitude of motives of various intensities, any one of which might grab attention and participate in the stream of behavior, given the appropriate circumstances, and (c) motives are not something a person either does or does not have, but instead, these motives rise and fall as circumstances change.

Types of Motivations Exist

In many people's minds, motivation is a unitary concept. Its key feature is its amount, or its intensity level. From this point of view, what matters about motivation is "how much." As a unitary construct, motivation can be nonexistent, low, moderate, high, or very high in terms of how much one has. Practitioners (teachers, managers, coaches) who view motivation as a unitary construct therefore focus on the question, "How can I foster more motivation in my students, workers, or athletes?"

In contrast, several motivation theorists suggest that important *types* of motivations exist (Ames, 1987; Ames & Archer, 1988; Atkinson, 1964; Condry & Stokker, 1992; Deci, 1992a). For instance, intrinsic motivation is different from extrinsic motivation (Ryan & Deci, 2000b). The motivation to learn is different from the motivation to perform

(Ames & Archer, 1988). And the motivation to approach success is different from the motivation to avoid failure (Elliot, 1997). In other words, human beings are motivationally complex (Vallerand, 1997).

Watch as an athlete practices, an employee works, and a doctor cares for a patient, and you will see variations in the intensity of their motivation. But an equally important observation to make is to ask the question of why the athlete practices, why the employee works, and why the doctor provides care. Attending to the person's type of motivation is important because some types yield a higher quality of experience, more favorable performances, and psychologically healthier outcome than do other types. For instance, students who learn out of an intrinsic motivation (via interest, curiosity) show more creativity, positive emotion, and conceptual learning than do students who learn out of an extrinsic motivation (via stickers, deadlines; Deci & Ryan, 1987). In achievement situations, students whose goal is to approach success ("My goal is to make an A.") outperform equally able students whose goal is to avoid failure ("My goal is to not make an F.") (Elliot, 1999). When people go on a diet, those with autonomous motivation often diet successfully by eating healthier foods, whereas those with controlled motivation often diet unsuccessfully and fall in on dysfunctional behaviors such as bulimia (Pelletier et al., 2004). Often—on a team of hardworking athletes, in a factory with hundreds of workers, and in a hospital full of doctors—people do not vary all that much in the level of their motivation but instead, in the type—or in the quality—of their motivations.

Emotions also show that motives vary not only in intensity but also in type. For instance, a person who is intensely angry behaves quite differently from a person who is intensely afraid. Both are highly motivated and "how much?" matters, but "which type?" (of emotion) is an equally important question to consider, because people who are angry behave very differently than do people who are afraid. So a complete motivational analysis of behavior answers both questions—How much motivation? and What type of motivation?

Motivation Includes Both Approach and Avoidance Tendencies

Generally speaking, people presuppose that to be motivated is better than to be unmotivated. Indeed, the two most frequently asked questions in motivation are, "How can I motivate myself?" and "How can I motivate another person?" In other words, how might one possess more motivation than one presently has, either for oneself or for others? Clearly, motivation is a state that people long to achieve for themselves and for others.

The problem is that you sometimes get what you wish for. In actuality, several motivational systems are aversive in nature—pain, hunger, distress, fear, dissonance, anxiety, pressure, helplessness, and so on. We do welcome many approach-oriented motivational states (e.g., interest, hope, joy, expectation, desire, achievement motivation, self-actualization). But many other motivational states are not so welcomed (e.g., fear, frustration), as they ready us to avoid aversive, threatening, and anxiety-provoking situations. Attention-getting motives like anxiety and tension essentially poke the proverbial needle in our side until we give the aversive motive its due and adjust our behavior accordingly. Often, motivational and emotional states operate under the principle, "the greater the irritation, the greater the change" (Kimble, 1990, p. 36).

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Human beings are curious, intrinsically motivated, sensation-seeking animals with goals and plans to master challenges, to develop warm interpersonal relationships, and to move toward attractive incentives, psychological development, and growth. Such an approach orientation to motivation focuses on desired goals and involves approaching and moving toward desired goals and outcomes. It is also true, however, that people are stressed, frustrated, plagued by insecurities, pressured, afraid, in pain, depressed, and encounter aversive situations from which they wish to flee. Such an avoidance orientation to motivation focuses on undesired goals and involves avoiding and moving away from undesired outcomes (Elliot, Sheldon, & Church, 1997). To adapt optimally, human beings have (and need) a motivational repertoire that features just as many aversive, avoidance-based motives as positive, approach-based motives. Hence, a full understanding of the rich fabric of human motivation includes an appreciation for both approach and avoidance tendencies (Carver, 2006; Elliot, 2006).

Motivation Study Reveals What People Want

The study of motivation reveals why people want what they want. It also reveals what people want—literally, the contents of human nature. The subject matter of motivation and emotion concerns what we all hope for, desire, want, need, and fear. It examines questions such as whether people are essentially good or evil, naturally active or passive, brotherly or aggressive, altruistic or egocentric, free to choose or determined by biological and societal demands, and whether or not people harbor within themselves tendencies to grow and to self-actualize.

Theories of motivation reveal what is common within the strivings of all human beings by identifying the commonalities among people from different cultures, different life experiences, different ages, different historical periods, and different genetic endowments. All of us harbor physiological needs such as hunger, thirst, sex, and pain. All of us inherit biological dispositions such as temperament and neural circuits in the brain for pleasure and aversion. We all share a small number of basic emotions, and we all feel these emotions under the same conditions, such as feeling fear when threatened and distress after losing something or someone of value. We all possess the same constellation of needs, including needs for autonomy, competence, and relatedness. We are all hedonists (approach pleasure, avoid pain), but we seem to want enjoyment, well-being, and personal growth even more (Seligman & Csikszentmihalyi, 2000).

Theories of motivation also reveal those motivations that are learned through experience and socially engineered through cultural forces (and hence outside the realm of human nature). For example, through our unique experiences, exposures to role models, and awareness of cultural expectations, we acquire different goals, values, attitudes, expectations, performance expectations, ways of explaining our successes and failures, personal aspirations, a sense of self, and so forth. These ways of energizing and directing our behavior arise from environmental, social, and cultural forces. The study of motivation therefore informs us what part of want and desire stem from human nature but also what part of want and desire stem from personal, social, and cultural learning. It reveals what part of motivation is universal and what part is enculturated.

To Flourish, Motivation Needs Supportive Conditions

A person's motivation cannot be separated from the social context in which it is embedded. That is, a child's motivation is affected by and somewhat dependent on the social context provided by his or her parents, and a student's motivation is affected by and somewhat dependent on the school he or she attends. The same could be said for the motivation of athletes affected by coaches, patients affected by physicians, and citizens affected by their culture. For the motivation of children, students, athletes, and the like, environments can be nurturing and supportive or environments can be neglectful, frustrating, and undermining. Those who are surrounded by social contexts that support and nurture their needs and strivings show greater vitality, experience personal growth, and thrive more than those who are surrounded by social neglect and frustration (Keyes, 2007; Ryan & Deci, 2000b). Recognizing the role that social contexts play in people's motivation and well-being, motivation researchers seek to apply principles of motivation in ways that allow people's motivation to flourish. Four areas of application are stressed in this book:

- Education
- Work
- Sports and exercise
- Therapy

In education, an understanding of motivation can be applied to promote students' classroom engagement, to foster the motivation to learn and develop talent, to support the desire to stay in school rather than drop out, and to inform teachers how to provide a motivationally supportive classroom climate. In work, an understanding of motivation can be applied to improve worker productivity and satisfaction, to build confident and resilient beliefs, to keep stress at bay, and to structure jobs so that they offer workers optimal levels of challenge, control, variety, and relatedness with their coworkers. In sports, an understanding of motivation can be applied to identify the reasons youths participate in sports, to design exercise programs that promote long-term adherence, and to predict the effects on performance of factors such as interpersonal competition, performance feedback, and goal setting. In therapy, an understanding of motivation can be applied to improve mental and emotional well-being, to cultivate a sense of optimism, to foster mature defense mechanisms, to explain the paradox of why mental control efforts so often backfire, and to appreciate the contribution that the quality of one's interpersonal relationships play in both motivation and mental health.

As you watch parents, teachers, workplace managers, coaches, and therapists attempt to motivate their children, students, workers, athletes, and clients, you will observe that not all attempts to motivate others are successful and that there really is an art to motivating others. The same can be said of attempts to motivate the self. For instance, take the time to actually monitor the emotions expressed by children, students, workers, athletes, and clients as they are being motivated by others. When people adapt successfully and their motivational states flourish, people express positive emotions such as joy, hope, interest, and optimism. But when people are overwhelmed by their environment and their

motivational states flounder, people express negative emotions such as sadness, hopelessness, frustration, and stress. In the chapters to come, much of the text will be devoted to practical applications and to the art of motivating the self and others.

There Is Nothing So Practical as a Good Theory

Consider how you might answer a motivational question such as, “What causes Joe to study so hard and for so long?” To generate an answer, you might begin with a commonsense analysis (e.g., “Joe studies so hard because he has such high self-esteem.”). Additionally, you might recall a similar instance from your personal experience when you tried very hard, and you might then generalize that experience to this particular situation (e.g., “The last time I studied that hard, it was because I had a big test the next day.”). A third strategy might be to find an expert on the topic and ask her (e.g., “My neighbor is a veteran teacher; I’ll ask her why she thinks Joe might be studying so hard.”). These are all fine and informative resources for helping answer motivational questions, but another resource is a good theory.

A theory is a set of variables (e.g., self-efficacy, goals, effort) and the relationships that are assumed to exist among those variables (e.g., strong self-efficacy beliefs

Table 1.5 Twenty-Four Theories in the Study of Motivation and Emotion (with a Supportive Reference Citation)

Motivation Theory	Supportive Reference Citation for Further Information
Achievement motivation	Elliot (1997)
Arousal	Berlyne (1967)
Attribution	Weiner (1986)
Cognitive dissonance	Harmon-Jones and Mills (1999)
Cognitive evaluation	Deci and Ryan (1985a)
Differential emotions	Izard (1991)
Drive	Bolles (1975)
Dynamics of action	Atkinson and Birch (1978)
Effectance motivation	Harter (1981)
Ego development	Loevinger (1976)
Expectancy x value	Vroom (1964)
Facial feedback hypothesis	Laird (1974)
Flow	Csikszentmihalyi (1997)
Goal setting	Locke and Latham (2002)
Learned helplessness	Peterson, Maier, and Seligman (1993)
Opponent process	Solomon (1980)
Positive affect	Isen (1987)
Psychodynamics	Westen (1998)
Reactance	Wortman and Brehm (1975)
Self-actualization	Rogers (1959)
Self-determination	Ryan and Deci (2000a)
Self-efficacy	Bandura (1997)
Sensation seeking	Zuckerman (1994)
Stress and coping	Lazarus (1991a)

encourage people to set goals, and once set, goals encourage high effort). As introduced earlier in Figure 1.1, theories provide a conceptual framework for interpreting behavioral observations, and they function as intellectual bridges to link motivational questions and problems to satisfying answers and solutions. With a motivation theory in mind, the researcher approaches a question or problem along the lines of, “Well, according to goal-setting theory, the reason Joe studies so hard and so long is because . . .” As you read through the pages of each chapter and become familiar with each motivation theory, consider its usefulness in answering the motivational questions you care about most.

Table 1.5 introduces 24 motivation theories that appear in the chapters to come. The theories are listed here for two reasons. First, the list introduces the idea that the heart and soul of a motivational analysis of behavior is its theories. Instead of existing as dry and abstract playthings of scientists, a good theory is a practical, useable tool for solving the problems faced by students, teachers, workers, employees, managers, athletes, coaches, parents, therapists, and clients. To paraphrase Kurt Lewin, there is nothing so practical as a good theory. A theory can serve as a useful guide in how to understand and then solve a problem.

Second, the list of theories can serve as a means for monitoring your growing familiarity with contemporary motivation study. At the present time, you probably recognize very few of the theories listed in the table, but your familiarity will grow week by week. Months from now, you will feel more comfortable with the two dozen theories listed in Table 1.5. If so, then you can then be confident that you are developing a sophisticated and complete understanding of motivation and emotion. When you know motivation theories, you know motivation.

PUTTING IT ALL TOGETHER: A FRAMEWORK TO UNDERSTAND THE STUDY OF MOTIVATION

One way to integrate the perennial questions, subject matter, and expressions of motivation is summarized in Figure 1.5. Antecedent conditions affect the person’s underlying motive state and the rise and fall of the person’s motive status creates an integrated sense of “wanting to” (or not) and the urge to approach (move toward and engage) versus avoid (escape from and disengage) that expresses itself through a pattern of energetic and goal-directed behavior, engagement, brain and physiology activations, and self-report.

Consider a few illustrative examples. Hours of food deprivation (antecedent condition) will cause a subsequent drop in plasma glucose (change in physiological need), which will be represented in consciousness as felt hunger and a sense of wanting to eat that energizes and directs forthcoming behavior, engagement, brain and physiology activations, and self-report. Likewise, receiving positive feedback from a job well done (antecedent condition) nurtures a perception of competence that cultivates a sense of wanting to improve that enhances persistence behavior, sparks engagement, calms upset physiology, and inspires self-reports like, “This is fun.” Similarly, a personal threat (antecedent condition) can give rise to fear (emotion) and hence a sense of wanting to flee and protect the self, a sense that foreshadows the person’s behavior (running away), engagement (information processing), physiology (heart rate), and self-report (worry, feeling nervous).

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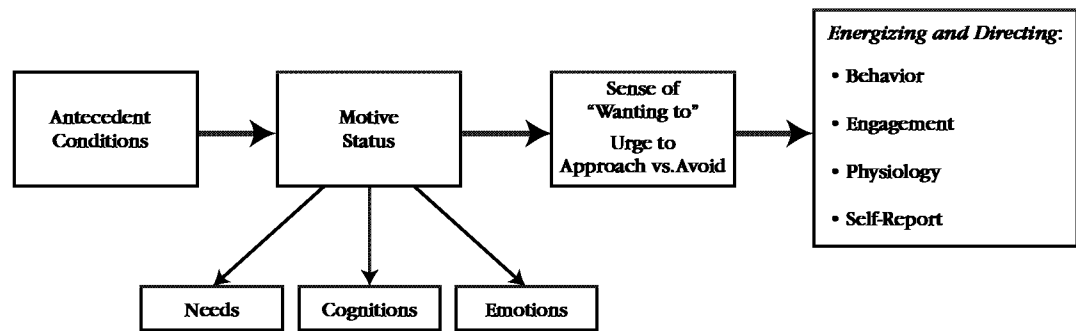


Figure 1.5 Framework to Understand the Study of Motivation

The summary model (Figure 1.5) illustrates how motivational psychologists answer their perennial questions. That is, the model identifies the conditions under which motives rise and fall (as influenced by antecedent conditions), illustrates the subject matter of motivation study (needs, cognitions, emotions), and illustrates how changes in motivation overtly express themselves (behavior, engagement, brain activations and physiology, and self-report). How all these processes work together to explain a specific motivational phenomenon is the job of a theory. The essential purpose of each of the theories listed in Table 1.5, for instance, is to explain how the model in Figure 1.5 works in relation to a particular motive (e.g., achievement, arousal, attribution).

SUMMARY

The journey to understand motivation and emotion begins by asking the perennial question, “What causes behavior?” This general question invites the more specific questions that constitute the core problems to be solved in motivation study: What starts behavior? How is behavior sustained over time? Why is behavior directed toward some ends but away from others? Why does behavior change its direction? Why does behavior stop? What are the forces that determine behavior’s intensity? Why does a person behave one way in a particular situation at one time yet behave in a different way at another time? What are the motivational differences among individuals, and how do such differences arise?

The subject matter of motivation concerns those processes that give behavior its energy and direction. The four processes capable of giving behavior strength and purpose—its energy and direction—are needs, cognitions, emotions, and external events. Needs are conditions within the individual that are essential and necessary for the maintenance of life and for growth and well-being. Cognitions are mental events, such as beliefs, expectations, and self-concept, that represent ways of thinking. Emotions are short-lived subjective–physiological–functional–expressive phenomena that organize feelings, physiology, purpose, and expression into a coherent response to an environmental condition, such as a threat. External events are environmental incentives that energize and direct behavior toward those events that signal positive consequences and away from those that signal aversive consequences.

Both in its presence and intensity, motivation can be expressed in four ways: behavior, engagement, brain activations and physiology, and self-report. The eight aspects of motivated behavior include attention, effort, latency, persistence, choice, probability of response, facial expressions, and bodily gestures. Engagement includes not only behavior, but also emotional, cognitive, and voice aspects of involving oneself in an activity. Brain and psychophysiological states express the

activity of the central nervous and hormonal systems, and they provide further data to infer the biological underpinnings of motivation and emotion. Self-report ratings measure motivational states as through interviews or questionnaires. All four of these expressions can be helpful in inferring motivation, but researchers rely heavily on behavioral, engagement, and physiological measures and only lightly on self-report ratings.

Eight themes run through motivation study. These themes are as follows: (1) motivation benefits adaptation; (2) motives direct attention and prepare action; (3) motives vary over time and influence the ongoing stream of behavior; (4) types of motivations exist; (5) motivation includes both approach and avoidance tendencies; (6) motivation study reveals what people want; (7) to flourish, motivation needs supportive conditions; and (8) there is nothing so practical as a good theory. These principles are important because they provide an overall perspective for unifying motivation study's diverse assumptions, hypotheses, perspectives, theories, findings, and applications into a coherent, interesting, and practical field of study. A general framework for understanding the motivational phenomenon in the chapters to come appears in Figure 1.5.

Chapter 2

Motivation in Historical and Contemporary Perspectives

PHILOSOPHICAL ORIGINS OF MOTIVATIONAL CONCEPTS

GRAND THEORIES

- Will
- Instinct
- Drive
 - Freud's Drive Theory
 - Hull's Drive Theory
 - Decline of Drive Theory
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SUMMARY

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Have you seen the old Michael J. Fox movie *Back to the Future*? In this movie, the hero drives a car that acts as a time machine capable of transporting its passengers back in time to the 1950s. Imagine being a passenger in such a car and having the chance to stop by the local university to see what the college motivation course of the 1950s looked like.

Besides the students' bobby socks and funny haircuts, one item to notice in this college course on motivation would be the lack of a textbook. The first textbook in motivation was not written until 1964 (Cofer & Appley, 1964). Another item would

be the syllabus. Featured topics on the mimeographed handout would be drive theory, incentives and reinforcement, acquired drives, conflict, and emotion. You could search the syllabus all you wanted, but none of the really interesting stuff about how to apply motivation would be included—nothing about motivation in the schools, sports psychology, work motivation, obesity and dieting, personal control beliefs, and so on. The course would, however, likely include psychoanalytic and self-actualization concepts—a week on Freud, another week on Maslow. The course would almost surely feature a weekly laboratory assignment. Each student would be assigned a rat for the semester, and lab time would involve carrying out experiments such as testing the effects of 24 hours of food deprivation on the rat's running speed toward a goal box filled with sunflower seeds. One week the student might manipulate different hours of deprivation, and the next week the student would manipulate different incentives placed in the goal box. Once you returned to the De Lorean time machine and drove back to the present, you would probably agree that the study of motivation has changed even more than have the haircuts and fashions.

PHILOSOPHICAL ORIGINS OF MOTIVATIONAL CONCEPTS

If our science-fiction technology sent you back 100 years, then you would not be able to find a motivation course at all. Courses in motivation (and the field of motivation itself) have not been around very long—less than 100 years.

The intellectual roots of motivation study owe their origin to the ancient Greeks—Socrates, Plato, and Aristotle. Plato (Socrates's student) proposed that motivation flowed from a tripartite, hierarchically arranged soul (or mind, psyche). At the most primitive level, the appetitive aspect contributed bodily appetites and desires, such as hunger and sex. The competitive aspect contributed socially referenced standards, such as feeling honored or shamed. At the highest level, the calculating aspect contributed decision-making capacities, such as reason and choosing. For Plato, these three different aspects of the soul motivated and explained different realms of behavior. Also, each higher aspect could regulate the motives of the lower aspects (e.g., reason could keep bodily appetites in check). Interestingly, Plato's portrayal of motivation anticipated Sigmund Freud's psychodynamics rather well (e.g., see Plato's Book IX, pp. 280–281): Roughly speaking, Plato's appetitive aspect corresponds to Freud's id, the competitive aspect to the superego, and the calculating aspect to the ego (Erdelyi, 1985).

Aristotle endorsed Plato's hierarchically organized, tripartite soul (appetitive, competitive, and calculating), although he preferred different terminology (nutritive, sensitive, and rational). The nutritive aspect was the most impulsive, irrational, and animal-like. It contributed bodily urges necessary for the maintenance of life. The sensitive aspect was also bodily related, but it regulated pleasure and pain. The soul's rational component was unique to human beings, as it was idea-related, intellectual, and featured the will. The will operated as the soul's highest level as it utilized intention, choice, and that which is divine and immortal.

Hundreds of years later, the Greek's tripartite psyche was reduced to a dualism—the passions of the body and the reason of the mind. The two-part soul retained the Greek's hierarchical nature as it made its chief distinction between that which was irrational, impulsive, and biological (the body) versus that which was rational, intelligent, and spiritual (the mind). The impetus for this reinterpretation rested mostly in the era's

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intellectual commitment to motivational dichotomies, such as passion versus reason, good versus evil, and animal nature versus human soul. Thomas Aquinas, for example, suggested that the body provided irrational, pleasure-based motivational impulses, whereas the mind provided rational, will-based motivations.

In the post-Renaissance era, René Descartes, a French philosopher, added to this mind–body dualism by distinguishing between the passive and active aspects of motivation. The body was a mechanical and motivationally passive agent, whereas the will was an immaterial and motivationally active agent. As a physical entity, the body possessed nutritive needs and responded to the environment in mechanistic ways through its senses, reflexes, and physiology. The mind, however, was a spiritual, thinking entity that possessed a purposive will. The mind could control the body and govern its desires. This distinction was a tremendously important one because it set the agenda for motivation study during the next 300 years: What was needed to understand the reactive motives was a mechanistic analysis of the body (i.e., the study of physiology); what was needed to understand the purposive motives was an intellectual analysis of the will (i.e., the study of philosophy).

For Descartes, the ultimate motivational force was the will. Descartes reasoned that if he could understand the will, then he would understand motivation. The will initiated and directed action; it chose whether to act and what to do when acting. Bodily needs, passions, pleasures, and pains created impulses to action, but these impulses only excited the will. The will was a faculty (a power) of the mind that controlled the bodily appetites and passions in the interests of virtue and salvation by exercising its power of choice. By assigning exclusive powers of motivation to the will, Descartes provided motivation with its first grand theory.

GRAND THEORIES

The phrase “grand theory” is used here and throughout the chapter to connote an all-encompassing theory that seeks to explain the full range of motivated action—why we eat, drink, work, play, compete, fear certain things, read, fall in love, and so on. The statement that “the will motivates all action” is a grand theory of motivation in the same way that “the love of money is the root of all evil” is a grand theory of evil. Both identify a single, all-encompassing cause that fully explains a phenomenon (all motivation, all evil). The historical study of motivation—from its philosophical roots to the 1960s—shows that early motivation study embraced three grand theories of motivation—will, instinct, and drive.

Will

Descartes’s hope was that once he understood the will, then an understanding of motivation would inevitably unfold. Understanding motivation was reduced to, and became synonymous with, understanding the will. For this reason, a great deal of philosophical energy was invested in the effort. Some progress was made as the acts of willing were identified to be choosing (i.e., deciding whether to act or not) (Rand, 1964), striving (i.e., creating impulses to act) (Ruckmick, 1936), and resisting (i.e., self-denial or resisting temptation). In the end, however, two centuries of philosophical analysis yielded

disappointing results. The will turned out to be an ill-understood faculty of the mind that arose, somehow, out of a congeries of innate capacities, environmental sensations, life experiences, and reflections upon itself and its ideas. Furthermore, once the will emerged, it somehow became endowed with purpose. And it turned out that some people showed more willpower than did other people.

To make a long story short, philosophers found the will to be as mysterious and as difficult to explain as was the motivation it supposedly generated. Philosophers discovered neither the will's nature nor the laws by which it operated. Essentially, philosophers painted themselves into the proverbial corner by multiplying the problem they were trying to solve. In using the will, philosophers now had to explain not only motivation but also the motivator—the will. As you can see, the problem only doubled. For this reason, those involved with the new science of psychology, which emerged in the 1870s (Schultz, 1987), found themselves in search of a less mysterious motivational principle. They found one not within philosophy but within physiology—the instinct.

Before leaving the historical discussion of the will, consider that contemporary psychologists do recognize that the mind (the will) does think, plan, and form intentions that precede action. If it is not the will that is doing the thinking, planning, and intending, then from where is all this intellectual striving coming? In other words, how do people form intentions to act (Gollwitzer, 1993), sustain effort (Locke & Kristof, 1996), resist temptation (Mischel, 1996), exercise self-control (Mischel & Mischel, 1983), control their thoughts (Wegner, 1994), and regulate themselves in general (Gailliot & Baumeister, 2007)? Rather than calling on their willpower (i.e., self-denial, grim determination), people resist temptation and delay gratification by creating and implementing plans and strategies to do so (Mischel, Shoda, & Rodriguez, 1989; Patterson & Mischel, 1976). Similarly, to sustain effort, people set goals (Locke & Kristof, 1996). Thus, concrete psychological processes (e.g., strategies, goals), not abstract willpower, paves the way to explain people's behavior and effective functioning (Gollwitzer & Bargh, 1996).

Instinct

Charles Darwin's biological determinism had two major effects on scientific thinking. First, it provided biology with its most important idea (evolution). In doing so, biological determinism turned the mood of scientists away from mentalistic motivational concepts (e.g., will) toward mechanistic and genetic ones. Second, Darwin's biological determinism ended the man–animal dualism that pervaded early motivation study. Instead, it introduced questions such as how animals use their resources (i.e., motivation) to adapt to the prevailing demands of an environment. For the earlier philosophers, the will was a uniquely human mental power, and breaking down the distinction between the motivation of humans and the motivation of animals was yet another reason to drop the will as a grand explanation of motivated behavior.

For Darwin, much of animal behavior seemed to be unlearned, automated, and mechanistic (Darwin, 1859, 1872). With or without experience, animals adapted to their prevailing environments: birds built nests, hens brooded, dogs chased rabbits, and rabbits ran from dogs. To explain this apparently prewired adaptive behavior, Darwin proposed the instinct.

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Darwin's achievement was that his motivational concept could explain what the philosopher's will could not—namely, where the motivational force came from in the first place (Beach, 1955). Instincts arose from a physical substance, from the genetic endowment; hence, they were physically real. This inherited and material substance (genes) led the animal to act in a specific way. Motivation study left philosophy and the humanities and entered physiology and the sciences.

Given the presence of the appropriate stimulus, instincts expressed themselves through inherited bodily reflexes—the bird built a nest, the hen brooded, and the dog hunted, all because each had a genetically endowed, biologically aroused impulse to do so. Essentially, motivation thinkers in the 19th century stripped away the inanimate part of the philosopher's dualism (i.e., the rational soul) and kept that which remained, namely the biological urges, impulses, and appetites.

The first psychologist to popularize an instinct theory of motivation was William James (1890). James borrowed heavily from the intellectual climate of Darwin and his contemporaries to endow human beings with a generous number of physical (e.g., sucking, locomotion) and mental (e.g., imitation, play, sociability) instincts. All that was needed to translate an instinct into goal-directed (i.e., motivated) behavior was the presence of an appropriate stimulus. Cats chase mice, run from dogs, avoid fires simply because they biologically must (i.e., because a mouse brings out the cat's instinct to chase, a dog brings out the instinct to flee, and the fire's flames bring out the instinct to protect). That is, the sight of a mouse (or dog or fire) activates in the cat a complex set of inherited reflexes that generated impulses to specific actions (e.g., chasing, running). Through the instinct, animals inherited a nature that endowed them with adaptive impulses to act and the reflexes they needed to produce that purposive action.

Psychology's affection for, and commitment to, its second grand theory of motivation grew rapidly. A generation after James, William McDougall (1908, 1926) proposed an instinct theory that featured instincts to explore, to fight, to mother offspring, and so on. McDougall regarded instincts as irrational and impulsive motivational forces that oriented the person toward one particular goal. It was the instinct that "determines its possessor to perceive, and to pay attention to, objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object, and to act in regard to it in a particular manner, or, at least, to experience an impulse to such action" (McDougall, 1908, p. 30). Thus, instincts (and their associated emotions) explained the goal-directed quality so readily apparent in human behavior. In many respects, McDougall's instinct doctrine paralleled James's ideas. The greatest difference between the two was McDougall's rather extreme assertion that without instincts human beings would initiate no action. Without these "prime movers," human beings would be inert lumps, bodies without any impulses to action. In other words, all of human motivation owes its origin to a collection of genetically endowed instincts (i.e., a grand theory of motivation).

Once researchers embraced the instinct as a grand theory of motivation, the next task became identifying how many instincts human beings possessed. Things quickly went out of control. The instinct doctrine became hopelessly speculative as different lists of instincts grew to include over 6,000 (Bernard, 1924; Dunlap, 1919). In the practice of compiling lists of instincts, intellectual promiscuity reigned: "If he goes with his fellows,

it is the 'herd instinct' which activates him; if he walks alone, it is the 'antisocial instinct'; if he twiddles his thumbs, it is the 'thumb-twiddling instinct'; if he does not twiddle his thumbs, it is the 'thumb-not-twiddling instinct'" (Holt, 1931, p. 428). The problem here is the tendency to confuse naming with explaining. Notice how the following sentence invokes (names) a motivational entity yet fails to actually explain the "why" underlying the observed behavior: The reason people are aggressive is because they have an instinct to fight.

In addition, the logic underlying instinct theory was exposed as circular (Kuo, 1921; Tolman, 1923). A circular explanation is one that attempts to explain an observation in terms of itself. Consider the aforementioned explanation of how the instinct to fight motivates acts of aggression. The only evidence that people possess an instinct to fight is that they sometimes behave aggressively. For the theorist, this is the worst kind of circularity: The cause explains the behavior (instinct → behavior), but the behavior is used as evidence for its cause (behavior → instinct). What is lacking here is some independent way to determine if the instinct really exists. The key to escaping circularity is to make new predictions (not just restate what has already been). One prediction, for instance, would be that if two very similar animals (i.e., animals endowed with similar instincts) were raised with different life experiences, then their instincts should lead them toward similar behaviors (despite dissimilar personal histories). When researchers performed such experiments on the mothering instinct in rats (Birch, 1956) and the handedness (right- or left-handed) instinct in humans (Watson, 1924), the rats and humans acted in ways that reflected their different experiences, not in ways that reflected their shared instincts.

Psychology's affair with instinct theory began with wholehearted acceptance but ended with sweeping denial.¹ Just as psychology previously abandoned the will, it abandoned the instinct. Once again, psychology found itself in search of a substitute motivational concept to explain behavior's purposive nature.

Drive

The motivational concept that arose to replace instinct was drive (introduced by Woodworth, 1918). Drive arose from a functional biology, one that understood that the function of behavior was to service bodily needs. As biological imbalances occurred (e.g., lack of food, water, sleep), animals psychologically experienced these bodily deficits as "drive." Drive motivated whatever behavior was instrumental to servicing the body's needs (e.g.,

¹Contemporary psychology no longer uses the instinct to explain complex human behavior. Nonetheless, the proposition that nonhuman animals show consistent, unlearned, stereotypical patterns of behavior is an undeniable observation. Bees build hexagonal cells, male stickleback fish attack red coloration, and birds build nests. Contemporary psychologists (but especially ethologists) concede that such stereotypical acts can be attributed to instincts in animals. As James wrote over a century ago, "that instincts . . . exist on an enormous scale in the animal kingdom needs no proof" (1890, p. 383). In using the term "instinct," ethologists (Eibl-Eibesfeldt, 1989; Lorenz, 1965; Moltz, 1965) now speak of inherited neuronal structures that are unmodified by the environment during development. These inherited neuronal structures give rise not to general patterns of behavior but to particular bits of situationally specific behavior, referred to as "fixed action patterns." Changing instinct's focus from the cause of complex behavior to the cause of bits of behavior (fixed action patterns) proved to be a comfortable theoretical compromise. While theoretically expedient, such a compromise clearly shows the decline of a grand theory. Explaining bits of behavior or bits of motivation is just not the same as explaining all of behavior and all of motivation.

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eating, drinking, approaching). The two most widely embraced drive theories came from Sigmund Freud (1915) and Clark Hull (1943).

Freud's Drive Theory

Freud, a physiologist by training, believed that all behavior was motivated and that the purpose of behavior was to serve the satisfaction of needs. His view of the nervous system was that biological urges (e.g., hunger) were constantly and inevitably recurring conditions that produced energy buildups within the nervous system (Freud, 1915). While it tried to maintain a constant and low energy level, the nervous system was perpetually being displaced from this objective by the emergence and reemergence of biological urges. Each energy buildup upset nervous system stability and produced psychological discomfort (i.e., anxiety). If the energy buildup rose unchecked, it could threaten physical and psychological health. Drive therefore arose as a sort of emergency warning system that action needed to be taken. Once initiated, such motivated behavior continued until the drive or urge was satisfied. In other words, behavior served bodily needs, and anxiety (drive) acted as a sort of middleman for ensuring that behavior occurred as and when needed to ensure bodily comfort.²

Freud (1915) summarized his drive theory with four components—source, impetus, aim, and object—as depicted in Figure 2.1. The source of drive was rooted in the body's physiology—in a bodily deficit (e.g., lack of food). Once it reached a threshold level of urgency, bodily deficit became psychological drive. Drive had motivational properties because drive had an impetus (force) that possessed the aim of satisfaction, which was the removal of the underlying bodily deficit. To accomplish this aim, the individual experienced anxiety on a psychological level, and it was this anxiety that motivated the behavioral search (aim) for an object capable of removing the bodily deficit. Satisfaction of the bodily deficit quieted drive/anxiety.

Despite its creativity, Freud's drive theory suffered at least three criticisms: (1) a relative overestimation of the contribution of biological forces to motivation (and hence, a relative underestimation of factors related to learning and experience); (2) an overreliance on data taken from case studies of disturbed individuals (and hence, an underreliance on data taken from experimental research with representative samples); and (3) ideas that were not scientifically (i.e., experimentally) testable (e.g., How can one empirical test whether or not people possess a drive to be aggressive?). None of these three criticisms applied, however, to the second major drive theory, that by Clark Hull.

Hull's Drive Theory

For Hull (1943, 1952), drive was a pooled energy source composed of all current bodily deficits/disturbances. In other words, particular needs for food, water, sex, sleep, and so forth summed to constitute a total bodily need. For Hull, as for Freud, motivation

²One way to understand Freud's view of nervous system energy (i.e., "libido") is through the analogy of a hydraulic system in which energy (like constantly flowing water) continues to rise and rise. As bodily drives continue to build up energy, the anxious urge to discharge that energy becomes increasingly urgent and expedient (or else the water would overflow). The higher the psychic energy rises, the greater the impulse to act. Adaptive behavior quieted the drive, for a time, but the ever-constant buildup of nervous-system energy would return (i.e., the water's inflow never shuts off).

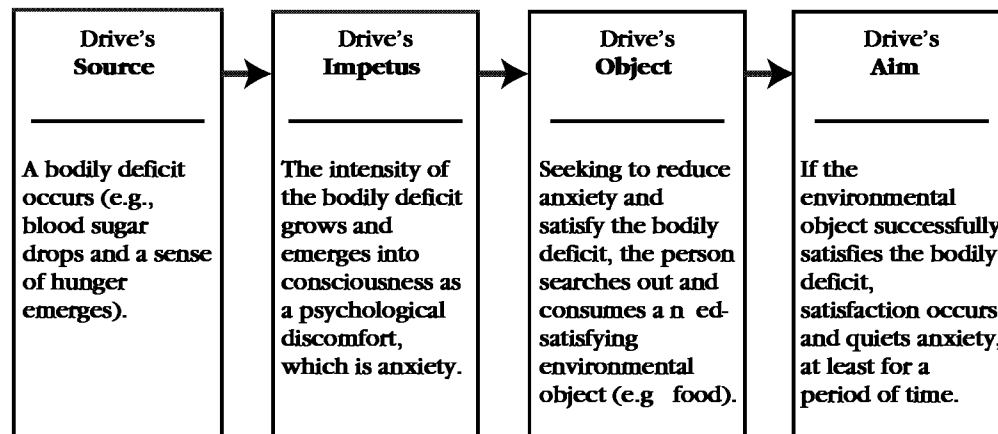


Figure 2.1 A Summary of Freud's Drive Theory

(i.e., drive) had a purely physiological basis and bodily need was the ultimate source of motivation (i.e., a grand theory of motivation).

Hull's drive theory had one outstanding feature that no motivation theory before it had ever possessed—namely, motivation could be predicted before it occurred. With both the instinct and the will, it was impossible to predict in an a priori fashion when and whether or not a person would be motivated. But if an animal was deprived of food, water, sex, or sleep, however, then drive would inevitably increase in proportion to the duration of that deprivation. Drive was an increasing monotonic function of total bodily need, which itself was an increasing monotonic function of hours of deprivation. The fact that drive could be known from antecedent environmental conditions marked the beginning of a *scientific* study of motivation. This was so because if one knew which environmental conditions created motivation, then one could manipulate (and predict) motivational states in the laboratory. One could also explore the effects of the manipulated motivational state on a host of outcomes (e.g., performance, learning).

Drive arose from a range of bodily disturbances, including hunger, thirst, sex, pain, air deprivation, temperature regulation, urination pressures, sleep, activity, nest building, and care for one's young (Hull, 1943, pp. 59–60). Once it arose, drive energized behavior (Bolles, 1975). Although drive energized behavior, it did not direct it. Habit, not drive, directed behavior. As one contemporary phrased it, "Drive is an energizer, not a guide" (Hebb, 1955, p. 249). Behavior-guiding habits came from learning, and learning occurred as a consequence of reinforcement. Hull's research led him to argue that if a response was followed quickly by a reduction in drive, learning occurred and habit was reinforced. Any response that decreased drive (e.g., eating, drinking, mating) produced reinforcement, and the animal learned which response produced drive reduction in that particular situation. To show how habit and drive (i.e., learning and motivation) produced behavior, Hull (1943) developed the following formula:

$${}_sE_r = {}_sH_r \times D$$

The variable ${}_sE_r$ is the strength of behavior (E stands for "excitatory potential") in the presence of a particular stimulus. ${}_sH_r$ is habit strength (i.e., probability of a

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particular drive-reducing response in the presence of a particular stimulus).³ D is drive. The observable aspects of behavior—running, persisting, and so on—are denoted by ${}_sE_r$. The variables ${}_sH_r$ and D refer to behavior's underlying, unobservable causes. The multiplication sign is important in that behavior occurred only when habit and drive were at nonzero levels. In other words, without drive ($D = 0$) or without habit ($H = 0$), there is no behavioral activity ($E = 0$).

Later, Hull (1952) extended his behavior system beyond $H \times D$ to include a third cause of behavior: incentive motivation, abbreviated as K .⁴ In addition to the motivational properties of D , the incentive value of a goal object (its quality, its quantity, or both) also energized the animal. After all, people generally work harder for \$50 than they do for \$1. Because he recognized that motivation could arise from either internal (D) or external (K) sources, Hull updated his formula as follows:

$${}_sE_r = {}_sH_r \times D \times K$$

Both D and K were motivational terms. The principal difference between the two was that D was rooted in internal stimulation via bodily disturbances, whereas K was rooted in external stimulation via the quality of the incentive. One of Hull's contemporaries, Neal Miller, summarized drive theory with his often-quoted phrase, "Drive, cue, response, reward," which meant that drive energized action in the direction of a stimulus (cue) that, when attained (by response), reinforced (reward) that pattern of drive–cue–response action (i.e., thirst–water fountain–drink–reinforcement).

In its zenith, Hull's drive theory was as popular as any theory in the history of psychology. That is a strong statement to make, but consider three historical occurrences that validate this claim. First, approximately half of all the articles published in the leading psychology journals in the early 1950s (e.g., *Psychological Review*, *Journal of Experimental Psychology*) included a reference to Hull's 1943 book. Second, books on motivation went from being practically nonexistent at midcentury to commonplace 10 years later (Atkinson, 1964; Bindra, 1959; Brown, 1961; Hall, 1961; Lindzey, 1958; Madsen, 1959; Maslow, 1954; McClelland, 1955; Olds, 1956; Peters, 1958; Stacey & DeMartino, 1958; Toman, 1960; Young, 1961). Third, in the 1950s the American Psychological Association (APA) invited its members to list the most important figures in the history of psychology (through midcentury). The survey rankings appear in Table 2.1. Notice the two names at the top of the list.⁵

³The subscripts s and r stand for "stimulus" and "response" to communicate that ${}_sH_r$ refers to a particular response in the presence of a particular stimulus. Similarly, the subscripts joined with ${}_sE_r$ refer to the potential "energy" of that response in the presence of that particular stimulus.

⁴Incidentally, if you happen to wonder why incentive motivation was abbreviated as K instead of as I , K stood for Kenneth Spence (Weiner, 1972). Spence convinced Hull of the necessity of incorporating incentive motivation into his behavior system. Besides, I was used for another variable, inhibition, which is not discussed here.

⁵By the dawn of the 21st century, the list of eminent psychologists had changed quite a bit (Haggbloom et al., 2002). In 2002, Sigmund Freud dropped to 3rd, while Clark Hull dropped to 21st. The current top 10, in order from 1st to 10th, still features a number of motivation researchers: B. F. Skinner, Jean Piaget, Sigmund Freud, Albert Bandura, Leon Festinger, Carl Rogers, Stanley Schachter, Neal Miller, Edward Thorndike, and Abraham Maslow.

Table 2.1 Midcentury Rankings of the 10 Most Important Historical Figures in Psychology

1. Sigmund Freud	6. Edward Thorndike
2. Clark Hull	7. William James
3. Wilhelm Wundt	8. Max Wertheimer
4. Ivan Pavlov	9. Edward Tolman
5. John Watson	10. Kurt Lewin

Decline of Drive Theory

Drive theory—both the Freudian and Hullian versions—rested on three fundamental assumptions: (1) drive emerged from bodily needs, (2) drive energized behavior, and (3) drive reduction was reinforcing and produced learning.

Throughout the 1950s, empirical tests of these three assumptions revealed both support and limitations. First, some motives emerged without any corresponding biological need. For instance, people with anorexia do not eat (and do not want to eat) despite a strong biological need to do so (Klien, 1954). Thus, motivation could emerge from sources other than one's bodily disturbances. Second, research recognized that external (i.e., environmental) sources of motivation could energize behavior. For example, a person who is not necessarily thirsty can feel a rather strong motive to drink upon tasting (or seeing or smelling) a favorite beverage. Hull did add incentive motivation (*K*) to his formula, but the important point is that motivational energy arose not only from bodily physiology but from other sources as well. Third, learning often occurred without any corresponding experience of drive reduction. Hungry rats, for instance, learn even when reinforced only by a nonnutritive saccharin reward (Sheffield & Roby, 1950). Because saccharin has no nutritional benefit, it cannot reduce drive (i.e., cannot serve the needs of the body). Other research showed that learning occurred not only after drive reduction but also after drive induction (i.e., an increase in drive; Harlow, 1953). Eventually, it became clear that drive reduction was neither necessary nor sufficient for learning to occur (Bolles, 1972). Over time, it became increasingly clear that motivational researchers needed to expand their intellectual search beyond the grand theory of drive.

Post-Drive Theory Years

The 1950s and 1960s were transitional decades in the study of motivation. In the early 1950s, the prevalent motivation theories were the well-known, historically entrenched grand theories. Drive theory was the dominant perspective on motivation (Bolles, 1975; Hull, 1952). Additional prominent midcentury motivational theories included optimal level of arousal (Berlyne, 1967; Hebb, 1955), pleasure centers in the brain (Olds, 1969), approach–avoidance conflicts (Miller, 1959), universal needs (Murray, 1938), conditioned motives (Miller, 1948), and self-actualization (Rogers, 1959). As motivation study progressed and as new findings emerged, it became clear that if progress was to be made, the field was going to have to step outside the boundaries of its grand theories. In the post-drive theory years, alternative theories of motivation did emerge and try to take their place as the new grand theory of the day. But motivation psychologists were simply gaining too much new information and forging a multidimensional perspective

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on motivation to be restricted to a grand theory. To investigate their new findings, the motivation psychologists of the 1970s began to embrace mini-theories of motivation (Dember, 1965). The next section discusses these mini-theories. But it will be helpful to pause here and consider the two motivational principles from the 1960s that were offered as possible post-drive theory replacements for a (fourth) grand theory of motivation: incentive and arousal.

Consider incentive. An incentive is an external event (or stimulus) that energizes and directs approach or avoidance behavior. Drive reduction theory asserted that people were motivated by drives, which “pushed” them toward particular goal objects (e.g., hunger pushed the person out into the environment to find food). Incentive motivational theories asserted that people were motivated by the incentive value of various objects in their environment that “pulled” them toward these objects (e.g., the sight of strawberry cheesecake pulled the person toward the dessert table). Notice that the primary motivation is not to reduce drive but, rather, to increase and maintain contact with attractive stimuli. The incentive theories that emerged in the 1960s fundamentally sought to explain why people approached positive incentives and why they avoided negative ones (e.g., Bolles, 1972; Pfaffman, 1960; Young 1966). These theories essentially focused on Hull’s *K* instead of his *D*, and they adopted the concept of hedonism, which essentially postulates that organisms approach signals of pleasure and avoid signals of pain. Through learning, people formed associations (or expectancies) of which environmental objects were gratifying and thus deserved approach responses, and which other objects were pain-inflicting and thus deserved avoidance responses. Incentive theories offered three new features: (1) new motivational concepts, such as incentives and expectancies, (2) the idea that motivational states could be acquired through experience rather than just through biology, and (3) a portrayal of motivation that highlighted moment-to-moment changes (because environmental incentives can change from one moment to the next).

Consider arousal. The rising disaffection with drive theory was countered by a rising affection for arousal theory. The discovery that lay the foundation for this transition came from the neurophysiological finding of an arousal system in the brain stem (Lindsley, 1957; Moruzzi & Magoun, 1949). The central ideas were that (1) aspects of the environment (how stimulating, novel, stressful) affected how aroused the brain was, and (2) variation in level of arousal had a curvilinear (the inverted-U shape) relationship to behavior. That is, unstimulating environments generated low arousal, emotions like boredom, and little in the way of approach or avoidance motivations; somewhat stimulating environments generated optimal arousal, emotions like interest, and approach motivation; and overly stimulating environments generated high arousal, emotions like fear, and avoidance motivation. Eventually, level of arousal (low, optimal, high) came to be understood as something “synonymous with a general drive state” (Hebb, 1955, p. 249): People prefer an optimal level of arousal and shun too little or too much arousal. So notice what happened to drive theory—it had been reinterpreted away from its biological roots and brought into the age of neurophysiology and cognition. By the late 1960s, the motivational psychologist of the day could focus on biological needs (drive), environmental incentives, or brain states of arousal.

With the growing disaffection with drive theory, it became increasingly evident that any one grand theory was simply unable to carry the whole burden of explaining motivation (Appley, 1991). In its attempt to cover the full range of motivational phenomena,

the contemporary landscape of motivation study is now characterized by a wide-ranging diversity of theories (“mini-theories”) rather than by any consensus to a single grand theory.

MINI-THEORIES

Unlike grand theories to explain the full range of motivation, mini-theories limit their attention to specific motivational phenomenon. Mini-theories seek to understand or investigate one particular:

- motivational phenomenon (e.g., the flow experience)
- particular circumstances that affect motivation (e.g., failure feedback)
- groups of people (e.g., extraverts, children, workers)
- theoretical question (e.g., What is the relationship between cognition and emotion?)

A mini-theory explains some but not all of motivated behavior. Thus, achievement motivation theory (a mini-theory) arose to explain how people respond to standards of excellence, and hence why some people show enthusiasm and approach, whereas others show anxiety and avoidance, when facing a standard of excellence. Achievement motivation theory leaves a great deal of motivated action unexplained, but it does a very good job of explaining an interesting slice of motivated action. The following list identifies some of the mini-theories (with a seminal reference) that emerged in the 1960s and 1970s:

- Achievement motivation theory (Atkinson, 1964)
- Attributional theory of achievement motivation (Weiner, 1972)
- Cognitive dissonance theory (Festinger, 1957)
- Effectance motivation (Harter, 1978a; White, 1959)
- Expectancy \times value theory (Vroom, 1964)
- Flow theory (Csikszentmihalyi, 1975)
- Intrinsic motivation (Deci, 1975)
- Goal-setting theory (Locke, 1968)
- Learned helplessness theory (Seligman, 1975)
- Reactance theory (Brehm, 1966)
- Self-efficacy theory (Bandura, 1977)
- Self-schemas (Markus, 1977)

Three historical trends explain why motivation study left behind its tradition of the grand theories to embrace the mini-theories of motivation (as discussed in the next three sections). In addition, the first journal devoted exclusively to the topic of motivation emerged in 1977, *Motivation and Emotion*. This journal has focused almost all of its attention on the empirical exploration of mini-theories of motivation.

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Active Nature of the Person

The purpose of drive theory was to explain how an animal went from inactive to active (Weiner, 1990). The midcentury assumption was that animals (including humans) were naturally inactive, and the role of motivation was to arouse the passive to become the active. Indeed, *motive* is derived from the Latin verb *movere*, which means “to move.” So drive, like all early motivational constructs, explained the instigating motor of behavior. As a point of illustration, a common midcentury definition of motivation was, “the process of arousing action, sustaining the activity in progress, and regulating the pattern of activity” (Young, 1961, p. 24). Motivation was the study of energizing the passive.

The psychologists of the second half of the century saw things differently. They emphasized that the person was always getting to and doing something. People were inherently active, always motivated. This understanding paralleled Albert Einstein’s 20th-century insight in physics that the natural state of planets was motion (because gravitational forces were always present). Like stars and planets, humans too experienced ever-present pushes and pulls. One midcentury motivational psychologist put it this way: “Sound motivational theory should . . . assume that motivation is constant, never ending, fluctuating, and complex, and that it is an almost universal characteristic of practically every organismic state of affairs” (Maslow, 1954, p. 69). Perhaps there is no place where this is more evident than in young children: “They pick things up, shake them, smell them, taste them, throw them across the room, and keep asking, ‘What’s this?’ They are unendingly curious” (Deci & Ryan, 1985b, p. 11).

In their mid-1960s review of motivation theories, Charles Cofer and Mortimer Appley (1964) divided the motivation theories of the day into those that assumed a passive, energy-conserving organism and those that assumed an active, growth-seeking organism. The passive-oriented portrayals outnumbered the active-oriented portrayals by 10 to 1. But theories assuming an active organism were beginning to emerge. Today’s ideas about motivation and emotion accept the premise of the active organism, and they deal little with deficit motivations (e.g., tension reduction, homeostasis, equilibrium) and much with growth motivations (e.g., creativity, competence, possible selves, self-actualization) (Appley 1991; Benjamin & Jones, 1978; Rapaport, 1960; White, 1960). Contemporary motivation study concerns itself with the study of purpose and volition in inherently active people.

Cognitive Revolution

The early motivational concepts—drive, homeostasis, arousal—were grounded in biology and physiology. Contemporary motivation study continues to maintain this alliance with biology, physiology, and sociobiology, but the tide changed in the early 1970s as psychology’s *Zeitgeist* (its “intellectual climate”) turned decidedly cognitive (Gardner, 1985; Segal & Lachman, 1972). The historical trend became known as the cognitive revolution. It was a time in which researchers focused on the power of thought, beliefs, and judgments as the primary causes of behavior. The cognitive revolution spilled into motivation just as it spilled into virtually all areas of psychology (D’Amato, 1974; Dember, 1974). Motivational concepts took a back-stage position as cognitive interpretation of events took psychology’s center stage. Motivation researchers began to emphasize

the importance of internal mental processes. Some of the mentalistic motivational constructs to emerge included plans (Miller, Galanter, & Pribram, 1960), goals (Locke & Latham, 1990), expectations (Seligman, 1975), beliefs (Bandura, 1977), attributions (Weiner, 1972), and the self-concept (Markus, 1977).

The cognitive revolution had two additional effects on thinking about motivation. First, intellectual discussions about motivation emphasized cognitive constructs (e.g., expectancies, goals) and deemphasized biological and environmental constructs. These discussions changed psychology's image of human functioning to become "human rather than mechanical" (McKeachie, 1976, p. 831). This ideological shift from mechanical to dynamic (Carver & Scheier, 1981, 1990; Markus & Wurf, 1987) was captured nicely in the title of one of the popular motivation texts of the day *Theories of Motivation: From Mechanism to Cognition* (Weiner, 1972). A review of motivation studies from the 1960s and 1970s shows a marked decline in experiments manipulating the deprivation states of rats and an equally marked increase in experiments manipulating success or failure feedback given to human performance (Weiner, 1990). The experimental design is not much different, but the focus on humans, instead of animals, is unmistakable.

Second, the cognitive revolution complemented the emerging movement of humanism. Humanistic psychologists critiqued the prevailing motivation theories of the 1960s as decidedly dehuman. Humanists resist the machine metaphor that portrays motivation in a deterministic fashion in response to unyielding biological forces, developmental fates (e.g., traumatic childhood experiences), or controls in the environment or society (Bugental, 1967; Wertheimer, 1978). Ideas from Abraham Maslow and Carl Rogers (Chapter 15) expressed psychology's new understanding of human beings as inherently active, cognitively flexible, and growth motivated (Berlyne, 1975; Maslow, 1987; Rogers, 1961).

Applied, Socially Relevant Research

A third important change helped usher in the mini-theories era: Researchers turned their attention to questions that were relevant to solving the motivational problems people faced in their lives (McClelland, 1978)—at work (Locke & Latham, 1984), in school (Weiner, 1979), in coping with stress (Lazarus, 1966), in solving health problems (Polivy, 1976), in reversing depression (Seligman, 1975), and so on. As researchers studied nonhuman animals less and humans more, they discovered a wealth of naturally occurring instances of motivation outside the laboratory. Hence, motivation researchers began focusing increasingly on socially relevant, applied questions and problems. Motivation psychologists began to initiate more frequent contact with psychologists in other areas, such as social psychology, industrial/organizational psychology, clinical and counseling psychology, and so on. Overall, the field became less interested in studying, for instance, hunger as a source of drive and more interested in studying the motivations underlying eating, dieting, obesity, and bulimia (Rodin, 1981; Taubes, 1998).

Emphasizing applied, socially relevant research placed contemporary motivation study in a sort of "Johnny Appleseed" role in which individual motivation researchers left their laboratories to take their questions ("What causes behavior?") into psychology's areas of specialization. Motivation's new alliances with other fields in psychology can be illustrated in Figure 2.2. The figure illustrates explicitly how motivation links itself with the reader's other courses in psychology. That is, courses in social psychology,

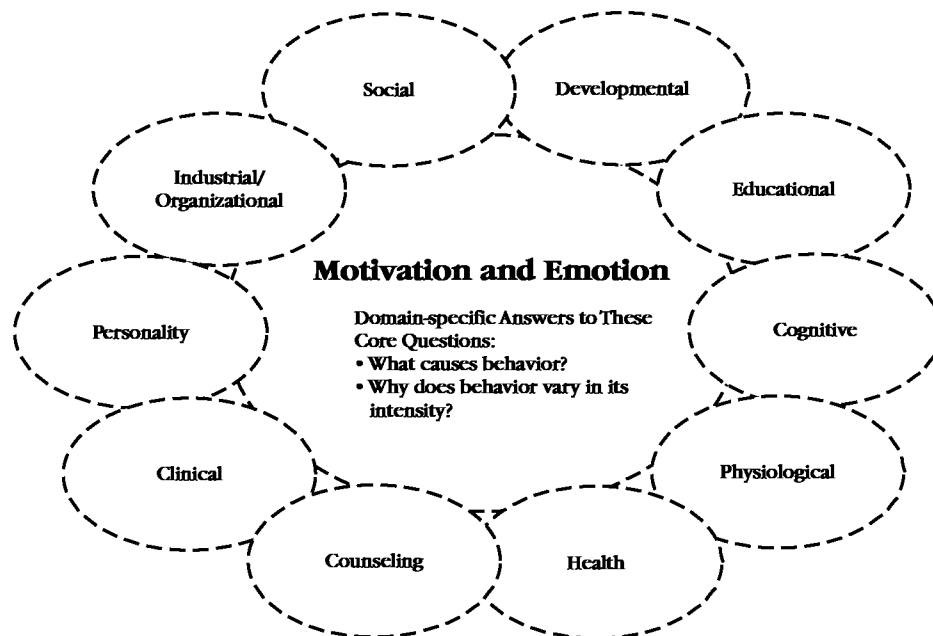


Figure 2.2 Relationship of Motivation Study to Psychology's Areas of Specialization

personality, and educational psychology will have some content that is decidedly motivational. Because of this overlap, it is sometimes difficult to say where the study of cognition ends and where the study of motivation begins (Sorrentino & Higgins, 1986) or where the study of perception ends and where the study of motivation begins (Bindra, 1979). As one neuropsychologist puts it, "Motivational concepts are needed to understand the brain, just as brain concepts are needed to understand motivation (Berridge, 2004, p. 205).

Weak boundaries between motivation and allied fields generally suggest an identity crisis within motivation study, but in practice, the absence of sharp boundaries facilitated the exchange of ideas and fostered an exposure to different perspectives and methodologies (Feshbach, 1984), including those outside of psychology (e.g., sociology; Turner, 1987). As a consequence, contemporary motivation study has gained a special richness, interest, and vitality (McNally, 1992). Much of what occurs in contemporary motivation research reflects the search for both a deeper scientific understanding of motivational processes as well as practical and useful applications of motivational principles that can be used to improve people's lives (Pintrich, 2003). In fact, it is somewhat unusual to encounter a contemporary scientific investigation about motivation that does not somewhat speak to a socially relevant, practical application.

CONTEMPORARY ERA

Thomas Kuhn (1962, 1970) described the history of most sciences, emphasizing that a discipline makes both continuous and discontinuous progress. With continuous progress, participants make slow, incremental, and cumulative progress as new data add to and supplant old data and new ideas add to and supplant outworn ideas. With discontinuous

Table 2.2 Outline of the Typical Development of a Scientific Discipline

1. Preparadigmatic	A budding science emerges. It consists of participants who do not share the same language or the same knowledge base. Debates are frequent about what should be the discipline's methods, problems, and solutions.
2. Paradigmatic	Preparadigmatic factionalism merges into a shared consensus about what constitutes the discipline's methods, problems, and solutions. This shared consensus is called a paradigm. Participants who share this paradigm accumulate knowledge and make incremental advances.
3. Crisis and revolution	An anomaly emerges that cannot be explained by the existing consensus/paradigm. A clash erupts between the old way of thinking (that cannot explain the anomaly) and the new way of thinking (that can explain the anomaly).
4. New paradigm	The new way brings discipline changing progress. Embracing the new consensus, participants settle back into the new paradigm (a new Paradigmatic stage). Progress returns to making incremental advances.

progress, however, radical ideas appear and rival (rather than add to) old ideas. If the radical ideas gain acceptance, researchers' ways of thinking drastically change, as old models are torn down to make room for new models to take their place.

Kuhn's developmental view of the history of a scientific field appears in Table 2.2. In its preparadigmatic stage, the primitive beginnings of a discipline take root as participants ask different questions, use different methods, pursue different problems, endorse different solutions, and basically disagree and argue a lot. In its paradigmatic stage, the discipline's participants succeed in reaching a consensus as to what constitutes their common theoretical and methodological framework. This shared framework (a "paradigm") allows each contributor to understand the discipline's methods and problems in the same way. Participants are then able to work collectively and collaboratively to gain an increasingly detailed and integrated understanding of their subject matter. Over time, however, the limitations and inadequacies of the accepted paradigm become apparent as an anomaly surfaces that cannot be explained with the prevailing paradigm. A general discomfort soon runs throughout the field. As a result, fresh insights and new discoveries arise, and these insights and discoveries breed a new way of thinking (a "paradigm shift"). Armed with their new way of thinking, researchers eventually settle into a new and improved paradigm, a process that typically takes multiple generations of scientists. Two classic examples of paradigm shifts, for instance, occurred when the Copernican revolution replaced astronomers' ideas of earth centrality and when Einstein's general theory of relativity unseated Euclidean geometry. Astronomy and physics were forever changed by paradigm shifts.

As a discipline, motivation study has participated in the rise and fall of three major ways of thinking: will, instinct, and drive. Each of these motivational concepts gained wide acceptance, but as new data emerged, each concept proved to be too limiting for further progress. Eventually, each was replaced by the next new-and-improved radical idea. Motivation study is currently in the midst of its mini-theories era.

The "crisis stage" transition from drive theory to the current mini-theories era has produced consequences that are both good and bad. On the bad side, motivation was

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dethroned as perhaps psychology's most important discipline to a sort of second-class field of study. The dethronement of motivation was so severe that, to some degree, the field collapsed for a decade and a half. Motivational concepts were set aside as the discipline was dominated by behaviorists who saw motivation as something that took place outside the person (in the form of incentives and reinforcers). When forces inside the person were acknowledged, they were either physiological, unconscious, or subconscious forces. Hence, studying the conscious aspects of motivation was somewhat an out-of-bounds thing to do (Locke & Latham, 2002).

Motivation study did not, however, disappear. The questions that define motivation, discussed in Chapter 1, endured. Instead of disappearing, motivation specialists dispersed themselves into virtually all areas of psychology. That is, the questions of motivation proved to be significant for and relevant to practically every aspect of psychology. Motivation researchers therefore branched out in alliances with other fields to form a loose network of researchers who shared a common concern and commitment to motivationally relevant questions and problems. Learning theorists, personality psychologists, social psychologists, clinicians, and others were unable to explain all the behavior they sought to explain without using motivational concepts. For instance, among neuroscientists, motivational concepts (e.g., hunger, pleasure) are vital to understanding why the brain evolved the way it did to such an extent that neuroscience truly needs to ally itself with the study of motivation (Beridge, 2004). What emerged were theories of social motivation (Pittman & Heller, 1988), physiological motivation (Stellar & Stellar, 1985), cognitive motivation (Sorrentino & Higgins, 1986), developmental motivation (Kagan, 1972), and so on. Furthermore, motivation theories specific to particular domains of application emerged: theories to explain the motivation underlying dieting and bingeing (Polivy & Herman, 1985), work (Locke & Latham, 1984, 1990; Vroom, 1964), sports (Roberts, 1992; Straub & Williams, 1984), education (Weiner, 1979), and so on. By 1980, motivation psychologists were in literally every area of psychology. Figure 2.2 illustrated this intellectual overlap between motivation researchers and other fields of psychology by drawing overlapping circles. As one illustration, educational psychologists were asking questions such as, "What is the role of interest in learning?" (Ainley, Hidi, & Berndorf, 2002) and "How does a teacher's praise affect students' motivation?" (Henderlong & Lepper, 2002). One prominent educational researcher put it this way (Pintrich, 2003, p. 667):

Currently, research on student motivation seems to be central to research in learning and teaching contexts. Researchers interested in basic questions about how and why some students seem to learn and thrive in school contexts, while others students seem to struggle to develop the knowledge and cognitive resources to be successful academically, must consider the role of motivation.

The 1990s Reemergence of Motivation Study

Starting in 1952, the University of Nebraska invited the most prominent motivation theorists of the day to gather annually for a symposium on motivation. In its inaugural year, contributors included Harry Harlow, Judson Brown, and Hobart Mowrer (famous names

in motivation study). The next year, John Atkinson and Leon Festinger presented papers, and Abraham Maslow, David McClelland, James Olds, and Jullian Rotter presented papers in the third year (again, all famous names in motivation study). The symposium quickly became a success and served a leadership role in defining the field. The symposium continued uninterrupted for 25 years, until a fundamental change occurred in 1978 (Benjamin & Jones, 1978). In 1979, the symposium discontinued its motivational theme and, instead, considered topics that changed from one year to the next, none of which had much to do with motivation. The 1979 symposium focused on attitudes, and later symposiums focused on topics such as gender additive behaviors, and aging. Recall that these years correspond to motivation's dethronement as perhaps psychology's most important field to a second-class field. Basically, the Nebraska Symposium, like psychology in general, lost interest in the study of motivation (for reasons described earlier).

The story does not end with motivation in hopeless crisis, however. In recognition of motivation's revival and its advances and accomplishments during the mini-theories era, the organizers of the 1990 Nebraska Symposium once again invited prominent motivation researchers to gather for a symposium devoted exclusively to the concept of motivation (Dienstbier, 1991). During that conference, the organizers asked the participants—Mortimer Appley, Albert Bandura, Edward L. Deci, Douglas Derryberry, Carol Dweck, Richard Ryan, Don Tucker, and Bernard Weiner (again, all famous names in motivation study)—if they thought motivation was once again strong enough and mature enough as a field to support an exclusive return to motivation topics. Unanimously and enthusiastically, the contributors agreed that motivation was once again a rich enough field of study to justify an annual gathering in Nebraska. The organizers agreed and, in so doing, gave motivation study a vote of confidence and a sense of public identity. Every year since, the symposium has continued its focus on motivation.

In the 1970s, motivation study was on the brink of extinction, “flat on its back,” as one pair of researchers put it (Sorrentino & Higgins, 1986, p. 8). The mere fact that the conference organizers had to ask the symposium participants whether or not motivation was a field that could stand on its own says something about the field's identity crisis. Motivation study survived by allying itself with other fields of study, and the 1990 Nebraska Symposium symbolically heralded its return toward an integrated, coherent field of study. At the same time, advances in neuroscience, evolutionary psychology, and even statistical methodologies were showing the limits of a purely cognitive analysis of behavior (Ryan, 2007). Cognitions were important to the initiation and regulation of behavior, but cognitions were inherently imbedded within the ongoing flow of motivations and emotions that guide, constrain, or at times even overwhelm cognitive processes. With a new millennium, motivation study once again has its critical mass of interested and prominent participants. To document such an optimistic conclusion, the reader can glance through psychology's major journals (e.g., *Psychological Review*, *Psychological Bulletin*, *Psychological Science*) and expect to find an article related to motivation in practically each issue. Motivational questions and problems are just too interesting and too important to ignore, it seems. And the same can be said for journals in a number of specialty areas as well (e.g., *Journal of Educational Psychology*, *Journal of Personality and Social Psychology*, *Journal of Exercise and Sport Psychology*).

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In the new millennium, motivation study is clearly back at the frontier of psychology. In the 14 chapters to come, the reader can expect to encounter a growing field—a bit disorganized, but one that is clearly interesting, relevant, and vital. As one participant phrased it, “If what you have is a way to help people address the significant questions in their lives, then there are ‘Help Wanted’ signs all over the place.”

A New Paradigm

A field of study without a guiding paradigm is never going to be at the frontier of science. The paradigm that has emerged during the 21st century for motivation study is one populated by multiple perspectives (mini-theories of motivation) and multiple voices (e.g., Figure 2.2), all of whom contribute a different piece to the puzzle of motivation and emotion study. The contemporary landscape is more like a democracy (of ideas, theories) than it is like a kingship (a grand theory).

The questions and problems of human behavior are complex and multifaceted. Hence, progress in motivation study depends on the extent to which the field can draw on a diversity of perspectives. The subject matter of motivation is fairly well defined—needs, cognitions, emotions, and external events—but the field is increasingly informed and enriched by a multidisciplinary orientation that draws ideas and methodologies from the many different fields that speak to the questions and problems of motivation (Pintrich, 2003). As these diverse ideas and methodologies from other fields are brought to bear on motivational questions, it has become increasingly evident that human motivation and emotion operate in a multilevel way (Driver-Linn, 2003). Each motivational agent—needs, cognitions, emotions, and external events—all interact with and influence one another. Each agent influences and guides the others, as complex and multilevel motivational forces shape, guide, and influence behavior rather than cause it directly.

Motivation's new paradigm is one in which behavior is energized and directed not by a single grand cause but, instead, by a multitude of multilevel and coacting influences. As expressed in Box 2, most motivational states can be (and indeed need to be) understood at multiple levels—from a neurological level, a cognitive level, a social level, and so on. The days are gone when motivation researchers could focus on a single motivational agent and study it in relative isolation of the other motivational agents, though doing so was once standard practice. In the study of needs, for instance, some theorists argued that “the study of human motivation is the study of human needs and the dynamic processes related to these needs” (Deci, 1980, p. 31). Emotion-minded theorists argued that “emotions are the primary motivation system” (Tomkins, 1970, p. 101). A cognitive study of motivation assumed that “people’s . . . beliefs determine their level of motivation” (Bandura, 1989, p. 1176). Other theorists focused rather exclusively on the motivational properties of external events (Baldwin & Baldwin, 1986; Skinner, 1953). Today, practically all motivation researchers emphasize the complex contribution of multiple motivational agents to explain behavior’s energy and direction. Though you will read separate chapters on needs, cognitions, emotions, and external events, notice how you cannot really understand how needs, for instance, motivate action until you also understand the interrelationships that needs have with cognitions, with emotions, and with external events. Each chapter echoes the idea that outcomes such as behavior,

BOX 2

performance, and psychological well-being are multidetermined and guided by a constellation of motivational agents (the interaction of needs, cognitions, emotions, and external events), and each chapter draws on research from various disciplines in psychology, such as neuroscience, social psychology, cross-cultural psychology, and so on. Such is the new paradigm.

CONCLUSION

Much can be gained by wading through 24 centuries of thinking about motivation. Consider the ancient questions: Why behave? Why do anything—why get out of the bed in the morning and do anything? Given these questions, the history of motivation began with the search for the instigators of behavior—that is, the search to identify that which energizes or initiates behavior. For two millennia (from Plato [ca. 428–348 B.C.] to Descartes [ca. 1596–1650]), the intellectual effort to understand motivation focused on the will, an immaterial entity that proved to be too difficult an undertaking for the new science of psychology. Biology (physiology) proved to be a more suitable alternative because its subject matter was material and measurable. In answering the “Why behave?” question, the answer came to be that behavior serviced the needs of the organism. Instinct, drive, and arousal all gained appeal because each clearly energized behavior that served the needs of the organism (e.g., people get out of bed because they are hungry and need to eat something). Incentive added to these motivational constructs because hedonism (approach pleasure, avoid pain) explained how environmental events could also energize behavior. Century by century, thinkers were improving their answers to the question of what instigates behavior: will, instinct, drive, incentive, arousal.

The whole process was going along rather nicely until a critical mass of motivation researchers realized that they were asking and pursuing the wrong question! The question of the instigation of behavior presumes a passive and biologically regulated organism; that is, one who is asleep and upon awaking, needs some motive to get into a behaving mode. At some point, motivation thinkers realized that sleeping was behaving and that the proverbial sleeper was actively engaged in his or her environment. The realization was that to be alive is to be active: Organisms are therefore always active, always behaving. There is no time in which a live organism is not behaving; there is no time in which a live organism is not showing both energy and direction.

The fundamental questions of motivation therefore shifted: Why does behavior vary in its intensity? Why does the person do one thing rather than another? These two questions expanded the charge of motivation study. Contemporary motivation study focuses not only on behavior's energy but also on its direction. This is why the three historical trends of the active organism, cognitive revolution, and concern for applied, socially relevant research are so important—namely, because the field became less entrenched in the instigators of behavior, biology, and animal laboratory experiments and increasingly interested in the directors of behavior, cognition, and human problems. This change in perspective opened the intellectual floodgates for the arrival of the field's mini-theories and a new paradigm in which behavior is energized and directed by a multitude of co-acting influences rather than by a single grand cause.

SUMMARY

A historical view of motivation study allows the reader to consider how the concept of motivation came to prominence, how it changed and developed, how ideas were challenged and replaced, and finally, how the field reemerged and brought together various disciplines within psychology (Bolles, 1975). Motivational concepts have philosophical origins. From the ancient Greeks through

the European Renaissance, motivation was understood within the two themes of that which is rational, immaterial, and active (i.e., the will) and that which is impulsive, biological, and reactive (i.e., bodily desires). The philosophical study of the will turned out to be a dead end that explained very little about motivation, as it actually raised more questions than it answered.

To explain motivation, the new field of psychology pursued a more physiological analysis of motivation by focusing on the mechanistic, genetically endowed concept of the instinct. The appeal of the instinct doctrine was its ability to explain unlearned behavior that had energy and purpose (i.e., goal-directed biological impulses). The physiological study of the instinct proved to be an intellectual dead end as well, at least in terms of its capacity to serve as a grand theory of motivation. Motivation's third grand theory was drive. In drive theory, behavior was motivated to the extent that it served the needs of the organism and restored a biological homeostasis. Like will and instinct, drive appeared to be full of promise, especially because it could do what no motivation theory had ever done before—namely, predict motivation before it occurred from antecedent conditions (e.g., hours of deprivation). Consequently, the theory enjoyed wide acceptance, especially as manifest in the theories of Freud and Hull. In the end, drive theory, too, proved itself to be overly limited in scope, and with its rejection came the field's disillusionment with grand theories in general, though several additional grand motivational principles emerged with some success, including incentive and arousal.

Eventually, it became clear that if progress was to be made in understanding motivation, the field had to step outside the boundaries of its grand theories and embrace the less ambitious, but more promising, mini-theories. Three historical trends explain this transition. First, motivation study rejected its commitment to a passive view of human nature and adopted a more active portrayal of human beings. Second, motivation turned decidedly cognitive and somewhat humanistic. Third, the field focused on applied, socially relevant problems. The field's changed focus toward mini-theories was part disaster and part good fortune. As to disaster, motivation lost its comfortable status as psychology's flagship discipline and descended rapidly into a second-class status. In reaction, motivation researchers dispersed into virtually all areas of psychology (e.g., social, developmental, clinical) and forged alliances with other fields to share ideas, constructs, methodologies, and perspectives. This turned out to be motivation's good fortune because the field's scattering into a wide range of other fields of study proved to be fertile ground to develop a host of enlightening mini-theories.

The theme throughout this chapter is that motivation study has undergone a constant developmental process. In retrospect, motivation study progressed from relatively simplistic conceptualizations of motivation to an ever-increasing collection of sophisticated and empirically defensible insights about the forces that energize and direct behavior. With the turn of the new millennium, the grand theories have passed and a new paradigm has emerged. Motivation study in the 21st century is populated by multiple perspectives and multiple voices (see Figure 2.2), all of which contribute a different piece to the puzzle of motivation and emotion study. This change has opened the intellectual floodgates for the arrival of mini-theories of motivation and a new paradigm in which behavior is energized and directed by a multitude of co-acting influences rather than by a single grand cause.

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Chapter 3

The Motivated and Emotional Brain

THE MOTIVATED AND EMOTIONAL BRAIN

Three Principles

- Specific Brain Structures Generate Specific Motivations
- Biochemical Agents Stimulate Specific Brain Structures
- Day-to-Day Events Stir Biochemical Agents into Action

LOOKING INSIDE THE BRAIN

BRAIN-GENERATED APPROACH VERSUS AVOIDANCE

- Hypothalamus
- Medial Forebrain Bundle
- Orbitofrontal Cortex
- Amygdala
- Septo-Hippocampal Circuit
- Anterior Cingulate Cortex
- Reticular Formation
- Prefrontal Cortex and Affect

NEUROTRANSMITTERS

- Dopamine
- Dopamine Release and Incentives
- Dopamine Release and Reward
- Dopamine and Motivated Action
- Addictions
- Liking and Wanting

HORMONES IN THE BODY

THE WORLD IN WHICH THE BRAIN LIVES

- Motivation Cannot Be Separated from the Social Context in Which It Is Embedded
- We Are Not Always Consciously Aware of the Motivational Basis of Our Behavior

CONCLUSION

SUMMARY

READINGS FOR FURTHER STUDY

The more you diet, the hungrier you get. The hunger-causing culprit is probably ghrelin, a hormone manufactured in the stomach, circulated in the blood, and detected and monitored by the brain. When a person goes for an extended period of time with little or no food (i.e., diets), the stomach and intestines detect the lack of nutrients and begin to manufacture and release ghrelin into the bloodstream. A brain structure (the hypothalamus) constantly monitors how much ghrelin is in the blood, and when ghrelin levels rise, the hypothalamus detects the message received from the stomach and intestines—namely, nutrients are low, send supplies. This message stimulates the hypothalamus to create the psychological experience of hunger.

Consider how this works. It is lunchtime, and some friendly psychologists invite you to join a group of volunteers at an all-you-can eat buffet (Wren et al., 2001). The lunch is free, and everyone may eat as much as they would like. But there is a catch. Thirty minutes before the feast, the researchers give some volunteers an intravenous injection of ghrelin while other volunteers receive only a placebo injection. Following the injections, the researchers take a chair, sit back, and watch what happens. They wonder what difference a spike in ghrelin might make to felt hunger and to the amount of food consumed. What happens is that, while the volunteers with the placebo eat a normal meal, the volunteers with extra ghrelin floating around in their bloodstreams pig out.

Consider a second illustration. Researchers monitored adults' naturally occurring ghrelin over the course of several days (Cummings et al., 2002). After measuring the adults' natural day-to-day levels of ghrelin, the researchers asked some of the adults to start a 3-month diet. The diet was carefully designed and included a program of vigorous exercise. It worked. On average, the dieters lost about 20% of their body weight, and they maintained their weight loss for another 3 months. Over this time, the researchers continued to monitor the dieters' levels of ghrelin. Unbeknownst to the dieters, their ghrelin levels continued to rise. Even 3 months after the diet was over, many dieters still felt "hungry all the time." How much ghrelin was in the former dieters' bloodstreams over the course of a typical day appears in Figure 3.1. It shows the dieters' daily ghrelin levels both before they started the diet (dashed line) and 3 months after their successful weight loss (darker line).

Figure 3.1 communicates four points. First, it shows that ghrelin was chronically high for the dieters (the darker line is always higher than the dashed line). Second, ghrelin rises and falls throughout the normal day (peaking around breakfast, lunch, and dinner). Third, eating food led to a rapid fall in ghrelin. Fourth, the lowest level of ghrelin (and hence the least hunger) after the diet equaled the highest level of ghrelin (and hence the most hunger) before the diet, which means that the least hunger felt by dieters equaled the most hunger felt by nondieters.

The message is that diet-induced food deprivation leads the body to generate a potent counterforce against further dieting and food deprivation (i.e., the spike in ghrelin). As one woman who experienced the diet-induced ghrelin spike phrased it, "When I look at a frosted butter cookie, the bells in my head that go off are like standing on the top of a cathedral." From a motivational point of view, the role of ghrelin is to stimulate the brain: "Eat, eat, eat!"

On a more optimistic note, the body also has hunger-suppressing hormones. Just like the stomach and intestines secrete ghrelin into the bloodstream to stimulate brain activity

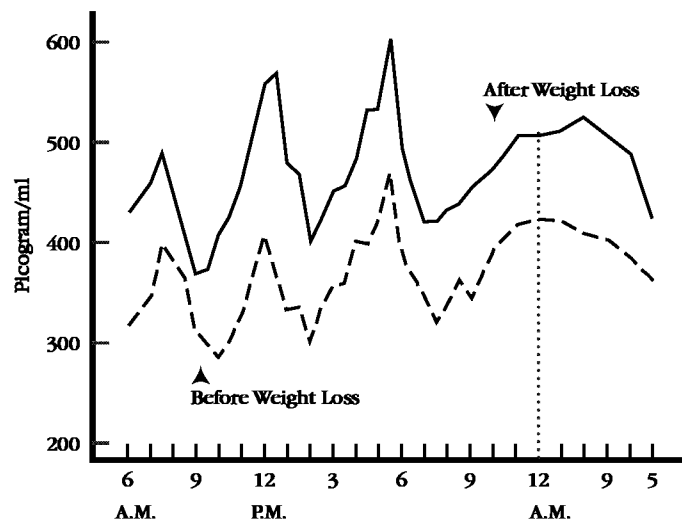


Figure 3.1 Ghrelin Levels in the Bloodstream Over a 24-Hour Period for Dieters and Nondieters

Note. The darker line represents the hour-to-hour ghrelin levels of dieters who lost 20% of their body weight three months before. The dashed line represents the hour-to-hour ghrelin levels of these same individuals before they began their diet and hence before they lost 20% of their body weight.

Source: From *Plasma Ghrelin Levels After Diet-induced Weight Loss or Gastric Bypass Surgery*, D.E. Cummings, D.S. Weigle, R.S. Frayo, P.A. Breen, M.K. Ma, E.P. Dellinger, and J.Q. Purnell, 2002, *New England Journal of Medicine*, 346, 1623–1630. Copyright © 2002 Massachusetts Medical Society. All rights reserved.

underlying appetite (feeling hungry), adipose (fat) tissue creates and releases leptin into the blood to stimulate brain activity underlying satiety (feeling full; Barzilai et al., 1997). By manufacturing, secreting, and monitoring these two hormones, our bodies regulate motivational states (hunger, satiety) in the face of both scarce food and weight loss (ghrelin rises, leptin falls) and abundant food and weight gain (ghrelin falls, leptin rises).

THE MOTIVATED AND EMOTIONAL BRAIN

Why is the brain important? Most people, maybe just about everyone, will say that the brain is important because it carries out cognitive and intellectual functions, including thinking, learning, remembering, decision making, and problem solving. These are very important brain processes indeed, but the brain does more. The brain is not only a thinking brain, it is also the center of motivation and emotion. It generates cravings, needs, desires, pleasure, and the full range of the emotions. In other words, as the brain performs its functions, it cares not only about what task it is doing (using its cognitive-intellectual functions), but it also very much cares about whether you want to do it (motivated brain) and what your mood is while doing it (emotional brain) (Gray, Braver, & Raichle, 2002).

All motivational and emotional states involve brain participation. To check such a claim, try an experiment on yourself by trying to experience anger, hunger, or curiosity without first recruiting the participation of the brain. Tough to do. As you work through such an exercise, you will learn that when it comes to understanding motivation and emotion the brain is the star of the show. The brain does, however, have a long list

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of supporting actors, including the major organs (e.g., liver, stomach) and all the biochemical agents throughout the body (e.g., hormones) and central nervous system (e.g., neurotransmitters).

Three Principles

To understand brain-based motivational processes, motivational researchers spend a great amount of time (1) mapping out which brain structures are associated with which specific motivational states, (2) investigating how the brain structures that are associated with motivational states become activated, and (3) understanding how day-to-day events in people's lives create this activation process. These three areas of activity lead to the following three general principles that guide research on the motivated and emotional brain.

Specific Brain Structures Generate Specific Motivations

Different brain structures, when stimulated, give rise to specific motivational states. Stimulating one part of the hypothalamus for instance, increases hunger, while stimulating a different part of the hypothalamus increases satiety. Also, damage to a particular brain structure (as through an accident or surgery) takes away the person's capacity to experience specific motivational states. Similarly, stimulation or damage to an integrated neural circuit—a number of interconnected brain structures—or stimulation or damage to a neurotransmitter pathway—a river-like cluster of nerve fibers that communicate via a single neurotransmitter—can increase and decrease specific motivational states. It is findings like these that lead motivation researchers to create a table such as that shown in Table 3.1 (discussed later in the chapter).

Biochemical Agents Stimulate Specific Brain Structures

If specific brain structures give rise to specific motivational states, then the next question to ask is, How do these brain structures get stimulated in the first place? Brain structures have receptor sites on them that endow them with the potential to be stimulated. The biochemical agents that stimulate these receptor sites are neurotransmitters and hormones. Neurotransmitters are the communication messengers of the nervous system (allowing one neuron to communicate with another), while hormones are the communication messengers of the endocrine system (allowing glands to communicate through the blood stream with bodily organs like the heart or lungs). Thus, to understand the rise and fall of motivational states, we need to look at how neurotransmitters and hormones stimulate and suppress specific brain sites.

Day-to-Day Events Stir Biochemical Agents into Action

To carry out their research studies, surgeons and motivation researchers artificially stimulate brain structures and artificially release biochemical agents into the bloodstream and nervous system (see Figure 3.4, page 52). In doing so, they can isolate the function of specific brain structures. But outside the laboratory—in settings such as the home, school, workplace, and athletic field—it is in the day-to-day events that the motivated and emotional brain is stimulated into action. In the hunger example that opened the

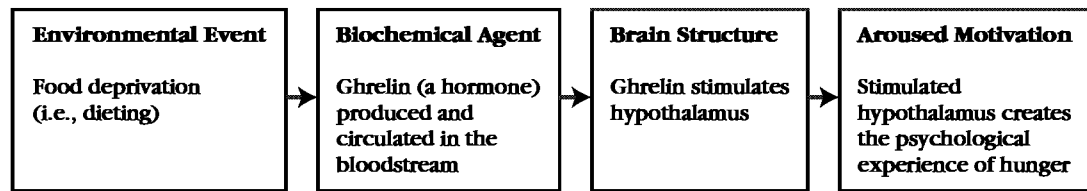


Figure 3.2 The Motivated Brain: Food Deprivation Activates the Ghrelin Release that Stimulates the Hypothalamus to Create Hunger

chapter, it was the act of dieting (food deprivation) that stirred the ghrelin hormone into action. Similarly, sleep deprivation tends to increase ghrelin and decrease leptin (hence increase appetite). While knowledge of how the brain works helps us understand motivation and emotion, we still need to link the events in our lives to brain activation. The final section of this chapter returns to this discussion of how day-to-day events stir neurotransmitters and hormones, and hence brain structures, into action.

As an example of how these three principles play themselves out in day-to-day life, Figure 3.2 illustrates the genesis of hunger in the motivated brain while Figure 3.3 illustrates the genesis of positive affect in the emotional brain. In both examples, events occur and circumstances change. The body reacts and adapts to these changes by manufacturing, releasing, and monitoring biochemical agents, such as hormones and neurotransmitters. These biochemical agents stimulate the brain and generate the psychological experiences of specific motivational and emotional states.

LOOKING INSIDE THE BRAIN

Researchers have several ways of looking inside the brain to see what is going on during motivational and emotional states. The first way is the old-fashioned way, a surgeon's view (discussed below). The second way is purely high technology, with functional magnetic resonance imaging (discussed subsequently).

Imagine suffering chronic pain, visiting the doctor, and learning that if the pain is to be alleviated then surgery is required. During the surgery, part of your cerebral cortex—the outside layers of the brain—is exposed, as illustrated in Figure 3.4. Surgically sawing through the skull to get to the brain is not an uncommon event in hospitals (to remove a brain tumor, for instance), though less invasive procedures are being developed and tested. For instance, surgeons now can insert a tiny camera into the nostril

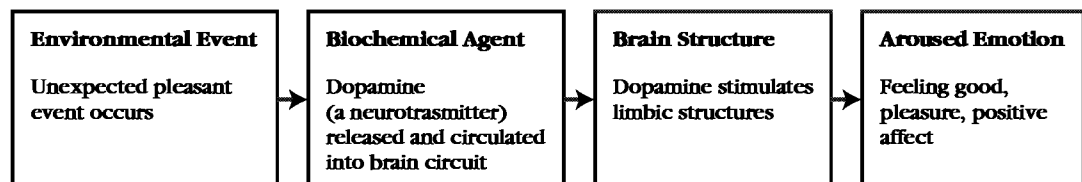


Figure 3.3 The Emotional Brain: Good Event Activates the Dopamine Release that Stimulates Positive Affect

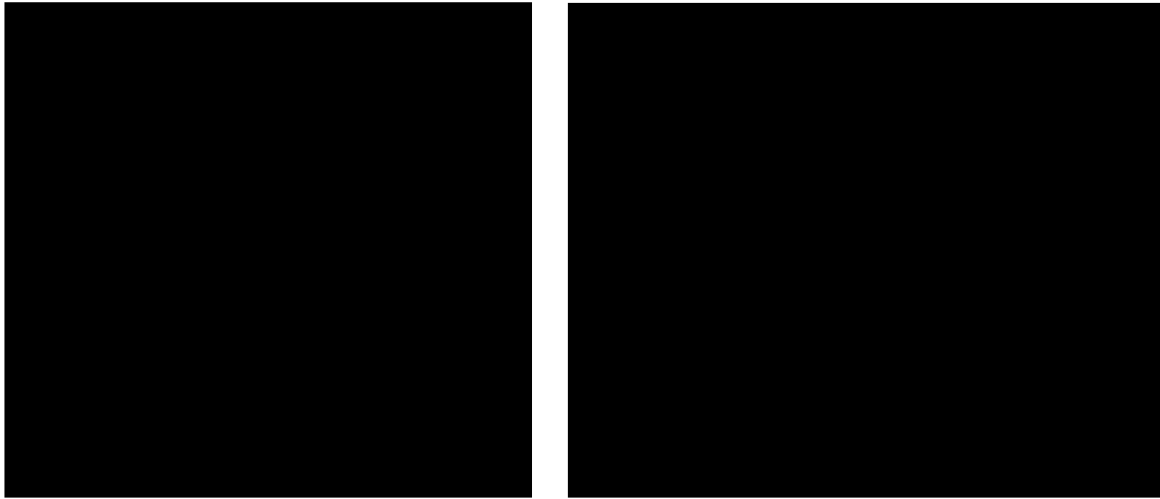


Figure 3.4 Photograph of an Exposed Human Cortex

or into an incision behind the ear and take a look via a remote computer screen. But, imagine today that you are participating in the more traditional surgery.

As you prepare for the surgery, you learn that the operation needs to be performed while you are awake! This is so because the surgeon needs to coordinate her site stimulations with your specific perceptions and responses. At first, the surgeon touches the surface of your cortex with a tiny, thin probe that emits an extremely mild electrical current. (Since the brain has no pain receptors, the brain stimulation is painless.) When she touches the first area you suddenly and unintentionally move your finger, and then, after she repositions the probe, you make a Humphrey Bogart–like flinch of the mouth. You do not understand what is going on, and the movements are occurring outside of your intentional control. The surgeon stimulates your brain, and your body automatically moves. Suddenly, the pain stops as the surgeon electrically stimulates your brain stem. Before dismissing the story as science fiction, consider that it is based on two actual studies (Hosobuchi, Adams, & Linchitz, 1977; Penfield, 1958).

The cerebral cortex shown in Figure 3.4 is largely associated with cognitive functions such as thinking, planning, and remembering. The cerebral cortex and its functions are intrinsically involved in generating and regulating motivation and emotional states (e.g., setting a goal, valuing an activity). If the surgeon continued to probe more deeply (as we will soon do), she would eventually come in contact with the limbic system—the part of the brain that is intricately involved in motivation and emotion.

The current gold standard for looking deeply inside the brain is functional magnetic resonance imaging (fMRI). The MRI takes a detailed snapshot—an electronic photograph—of the structure of the brain as the person lies down inside the massive machine with its head-fitting pads, huge magnet, and computer attachments. As the person lies down and experiences some motivational and emotional state, the machine detects changes in blood oxygenation caused by brain activity. Over time, the fMRI produces a videotaped version of moment-to-moment brain activity during a motivational or emotional episode.

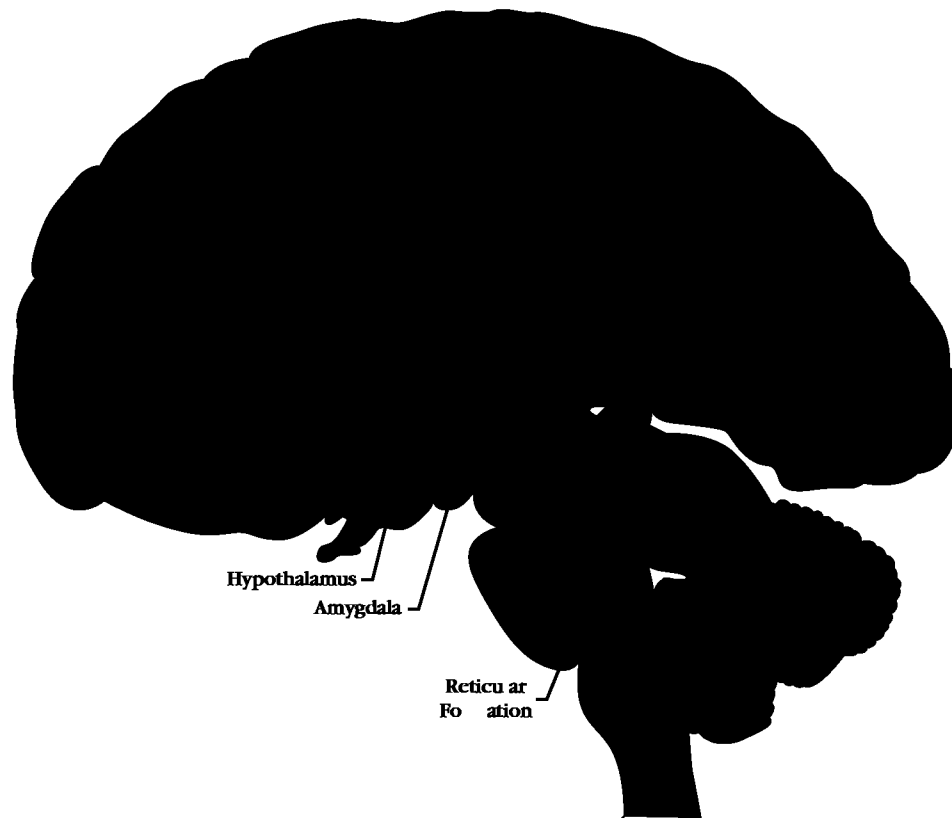


Figure 3.5 Cross Section of the Brain Showing the Anatomic Position of the Key Brain Structures Involved in Motivation and Emotion

The anatomical location of several key brain structures related to motivation and emotion appears in Figure 3.5. The figure is the sort of photograph that can be produced by a MRI. Several of the structures in the figure exist within the limbic system, the so-called inner lobe of the brain that surrounds the brain stem and lies beneath the cortex (Nauta, 1986). The key limbic brain structures include the hypothalamus, amygdala, hippocampus, septal area, ventral tegmental area, and the fibers that connect these structures into a communication network (Isaacson, 1982; see Figure 3.5). The cerebral cortex is also associated with motivational and emotional states, as thinking itself can be an inherently motivation- and emotion-generating thing to do (e.g., making a plan, setting a goal).

One way researchers can know which particular brain sites are associated with which particular motivational and emotional states can be determined by reviewing an fMRI. The individual might be food deprived (i.e., hungry), asked to recall a memory in which he or she felt afraid, or told to expect a forthcoming positive event such as a monetary reward. As the person's motivation and emotion changed, so would the activity of his or her brain. And the fMRI can pick up those changing brain states to confirm that this is what the brain does during hunger, this is what the brain does during fear, this is what the brain does during the anticipation of a positive event, and so on. The principal brain structures involved in motivation and emotion appear in Table 3.1.

54 Chapter 3 The Motivated and Emotional Brain**Table 3.1** Motivational and Emotional States Associated with Specific Brain Structures

Brain Structure	Associated Motivational or Emotional Experience
Approach-Oriented Structures	
Hypothalamus	Pleasurable feelings associated with feeding, drinking, mating
Medial forebrain bundle	Pleasure, reinforcement
Orbitofrontal cortex	Learning the incentive value of events, making choices
Septal area	Pleasure center associated with sociability, sexuality
Nucleus accumbens	Pleasurable experience of reward, hotspot for liking
Anterior cingulate cortex	Mood, volition, making choices
Cerebral cortex (frontal lobes)	Making plans, setting goals, formulating intentions
Left prefrontal cerebral cortex	Approach motivational and emotional tendencies
Medial prefrontal cerebral cortex	Learning response–outcome contingencies that underlie perceived control beliefs and mastery motivation
Avoidance-Oriented Structures	
Right prefrontal cerebral cortex	Withdraw motivational and emotional tendencies
Amygdala	Detecting and responding to threat and danger (e.g., via fear, anger, and anxiety)
Hippocampus	Behavioral inhibition system during unexpected events
Arousal-Oriented Structure	
Reticular formation	Arousal

BRAIN-GENERATED APPROACH VERSUS AVOIDANCE

Much of the motivated brain's activity is organized around generating an excitatory “Yes, I want to” readiness to approach objects and events in the environment or an inhibitory “No, I don't want to” avoidance of objects and events in the environment. Table 3.1 organizes the key motivational and emotional brain structures associated with generating approach and the key motivational and emotional brain structures associated with generating avoidance. The section below highlights the key motivational and emotional role played by (1) three approach-oriented structures—hypothalamus, medial forebrain bundle, and orbitofrontal cortex, (2) two avoidance-oriented structures—amygdala and hippocampus, (3) the prefrontal cerebral cortex, which is associated with both approach and avoidance motivation, and (4) one arousal-associated structure—the reticular formation.

Hypothalamus

The hypothalamus is a small brain structure that comprises less than 1% of the total volume of the brain. Despite its small size, it is a motivational giant. The hypothalamus exists as a collection of 20 neighboring and interconnected nuclei that serve separate and discrete functions. Through the stimulation of its 20 separate nuclei, the hypothalamus regulates a range of important biological functions, including eating, drinking, and mating (via the motivations for hunger, satiety, thirst, and sex). Chapter 4 will detail the role of the hypothalamus in regulating these physiological needs. As featured in Chapter 4, hypothalamic stimulation generates wants for, and the pleasures associated with, water,

food, and sexual partners. But here the discussion centers on the role of the hypothalamus in the regulation of both the endocrine system and autonomic nervous system. By regulating these two systems, the hypothalamus is able to regulate the body's internal environment (e.g., heart rate, hormone secretion) so to adapt optimally to the environment (e.g., cope with a stressor).

The hypothalamus controls the pituitary gland—the endocrine system's so-called “master gland” (Agnati, Bjelke, & Fuxe, 1992; Pert, 1986). Anatomically, the hypothalamus is immediately north of the pituitary gland, and it regulates the pituitary gland by secreting hormones into the tiny capillaries that connect the hypothalamus to the pituitary gland. The pituitary gland, in turn, regulates the endocrine system. Therefore, the pituitary gland regulates the endocrine (hormonal) system, while the hypothalamus regulates the pituitary gland. For instance, to increase arousal the hypothalamus stimulates the pituitary gland to send hormones through the bloodstream to stimulate the adrenal glands to release its hormones (epinephrine, norepinephrine) that trigger the well-known “fight-or-flight” response.

The hypothalamus also controls the autonomic nervous system. The autonomic nervous system (ANS) includes all neuronal innervations into body organs that are under involuntary control (e.g., heart, lungs, liver intestines, musculature). It is divided into the excitatory sympathetic system that accelerates bodily functions and alerts the body (as through an increased heart rate) and the inhibitory parasympathetic system that facilitates rest, recovery, and digestion following bodily stress and emergency. Therefore, the autonomic nervous system begins at the hypothalamus (the hypothalamus is the ANS's head ganglion, or starting point) and extends its nerves throughout the body by innervating its many organs.

When we experience an important change in the environment (e.g., threat, opportunity), the hypothalamus has two major means to regulate the body's reaction and thereby cope effectively with the environmental change. On the one hand, the hypothalamus can generate arousal (sympathetic activation) or relaxation (parasympathetic activation) by stimulating the ANS. On the other hand, the hypothalamus can stimulate the endocrine system by stimulating the pituitary gland to release hormones into the bloodstream.

Medial Forebrain Bundle

The medial forebrain bundle is a relatively large collection of pathway-like fibers that connect the hypothalamus to other limbic structures, including the septal area, mammillary bodies, and the ventral tegmental area. The medial forebrain bundle is so closely connected to the hypothalamus that many argue that the lateral hypothalamus and the medial forebrain bundle fibers that pass through it cannot be dissociated—that is, they are pretty much the same thing (Isaacson, 1982). In terms of motivation, the medial forebrain bundle is as close to a “pleasure center” in the brain as we have. If an animal is equipped with a tiny electronic backpack like the one shown in Figure 3.6, and if researchers use a laptop computer to stimulate the animal's medial forebrain bundle, then the animal will repeat whatever behavior it was doing during a stimulation of its medial forebrain bundle. That is, stimulation of the medial forebrain bundle creates pleasure and leads animals to act as if they have just received positive reinforcement, much in the same way as if they had just received actual reinforcement, such as their favorite food. By



Figure 3.6 Rat with an Electronic Backpack Capable of Delivering a Mild Electrical Stimulation to the Brain via Remote Control

stimulating the medial forebrain bundle at the right time, researchers can, for instance, motivate/reinforce an animal to learn how to navigate a maze (Talwar et al., 2002).

In humans, stimulating the medial forebrain bundle does not produce intense pleasure and ecstasy but, instead, generally positive feelings (Heath, 1964), as implied by the following clinical observation of patients with schizophrenia who received such electrical brain stimulation:

The patients brightened, looked more alert, and seemed to be more attentive to their environment during, or for at least a few minutes after, the period of stimulation. With this basic affective change, most subjects spoke more rapidly, and content was more productive; changes in thought were often striking, the most dramatic shifts occurring when prestimulation associations were pervaded with depressive affect. Expressions of anguish, self-condemnation, and despair changed precipitously to expressions of optimism and elaborations of pleasant experiences, past and anticipated. (Heath, 1964, p. 224)

Orbitofrontal Cortex

As we make our way through the day and compare the incentive value of the possible objects and events that might guide our behavior and actions, some objects and some events attract our attention and serve as attractive incentives to our actions. The orbitofrontal cortex is the brain structure that processes such incentive-related information that helps people make choices between options, such as which product among many to buy or whether to drink orange juice or water (Dickinson & Balleine, 2002). In a demonstration of the orbitofrontal cortex's role in incentive motivation and goal selection, researchers monitored participants' brains with a PET scan while they looked at a menu and selected their order. The orbitofrontal cortex is active when people consider

their options, remember what on the menu is good and what is not, and make their selection among the different incentives (menu items) to pursue (Arana et al., 2003).

Amygdala

The amygdala (meaning “almond-shaped”) is a collection of interconnected nuclei associated with emotion and motivation (McDonald, 1998). Overall, the amygdala detects and responds to threatening and emotionally significant events, though each of its different nuclei serves a different function. Stimulation of one part of the amygdala generates emotional anger, while stimulation of another part generates emotional fear and defensive behavior (Bandler, 1988). Therefore, the amygdala regulates the emotions involved in self-preservation, such as fear, anger, and anxiety. Consequently, impairment of the amygdala will produce striking changes, including an overall tameness, affective neutrality, a lack of emotional responsiveness, preference for social isolation over social affiliation, a willingness to approach previously frightening stimuli, and an impaired ability to learn that a stimulus signals positive reinforcement (Aggleton, 1992; Kling & Brothers, 1992; Rolls, 1999). The amygdala is also involved in the perception of other people’s emotions, facial expressions, and in our own mood, especially negative emotionality (Adolphs, Tranel, Damasio, & Damasio, 1994; LeDoux, Romanski, & Xagoraris, 1989; Rolls, 1999). Thus, the amygdala processes emotional information (Hamann, Ely, Hoffman, & Kilts, 2002).

The amygdala also plays a key role in the learning of new emotional associations (Cardinal, Parkinson, Hall, & Everitt, 2002; Gallagher & Chiba, 1996). For instance, the amygdala allows us to learn to fear environmental dangers (Davis, 1992). We experience fear through bodily reactions such as heart rate acceleration, muscular tension, behavioral freezing, and “fear face” facial expressions. As shown in Figure 3.7, as the person encounters potentially fearful objects in the environment, amygdala stimulation occurs and activates neighboring brain structures (e.g., hypothalamus, ventral tegmental area) that

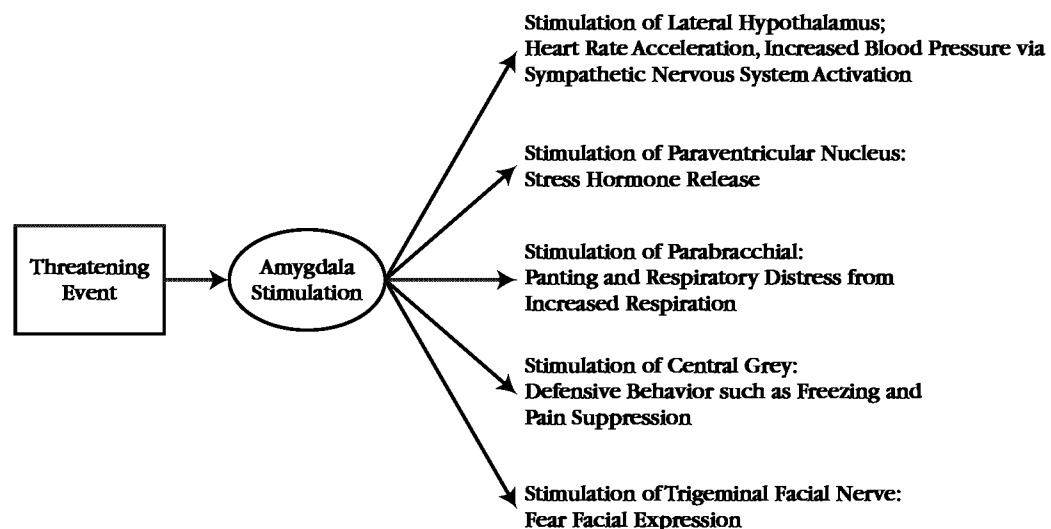


Figure 3.7 Amygdala Connections to Express Fear in Response to a Threatening Event

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release neurotransmitters (dopamine, serotonin, noreadrenaline, acetylcholine) to instigate and regulate the coordinated fear response, including rapid breathing (Harper, Frysinger, Trelease, & Marks, 1984), heart rate acceleration (Kapp, Gallagher, Underwood, McNall, & Whitehorn, 1982), and high blood pressure (Morgenson & Calaresu, 1973), as well as hormonal discharge and emotional facial expressions (Davis, Hitchcock, & Rosen, 1987). As one point of illustration, a rat with a lesioned amygdala will crawl all over a sleeping cat and even nibble playfully on the cat's ear (Blanchard & Blanchard, 1972). What is missing from the fearless rat is its capacity to generate the hard-wired amygdala-coordinated fear response, as shown in the right-hand side of Figure 3.7. Without an amygdala, the rat lacks the means to respond emotionally to the cat, and it also lacks the capacity to learn to fear the cat when it wakes up and acts in a threatening way. When humans have their amygdala removed (to control epileptic seizures, for instance) they become calm, docile, and emotionally indifferent, even in the face of provocation (Aggleton, 1992; Ramamurthi, 1988).

The amygdala has an interesting anatomical relationship with other brain areas. The amygdala sends projections to almost every part of the brain, although only a small number of projections return information back to the amygdala. This imbalance helps explain why emotion, especially negative emotion, generally overpowers cognition more than cognition overpowers emotion. Hence, a lot of fear and anger messages get blurted out while relatively few messages of reason and rationality return back to calm the amygdala. The current thinking is that most amygdala nuclei (e.g., central nucleus) are evolutionarily old structures that produce primitive emotionality, while a minority of amygdala nuclei (e.g., basolateral) have undergone relatively recent experiences to develop reciprocal projections and pathways with the neocortex and frontal lobes (Cardinal et al., 2002) that allow for some degree of conscious regulation of these primitive emotions.

Septo-Hippocampal Circuit

The septo-hippocampal circuit involves the integrated action of several limbic structures, including the septal area, nucleus accumbens, hippocampus, cingulate gyrus, fornix, thalamus, hypothalamus, and mammillary bodies (see Figure 3.5). While it is a limbic circuit, the septo-hippocampal circuit also includes cerebral cortex interconnections. Hence, a good deal of cognitive activity from memory and imagination are input into the circuit. The septo-hippocampal circuit therefore forecasts the emotion associated with upcoming events in terms of both anticipated pleasure and anticipated anxiety (Gray, 1982).

The *nucleus accumbens* plays a critical role in the experience of pleasure from naturally occurring reinforcers (e.g., good food, social acceptance) and drugs that contribute to addictions (Berridge & Robinson, 1998). It generates a “liking” reaction to different incoming sensations, such as food (Pecina & Berridge, 2005). The *hippocampus* operates as a “comparator” that constantly compares incoming sensory information with expected (from memory) events (Smith, 1982; Vinogradova, 1975). If a person goes about his or her everyday activity and encounters events and circumstances that match with those that could be expected from memory, then the hippocampus functions in an “okay” checking mode. For example, if you come home and expect to find your front door locked and Rover greeting you at the other side of the door, and sure enough, the door is locked and Rover greets you merrily, then what you expected to happen

matches with what did actually happen. In this scenario of confirmed expectations, the septo-hippocampus does not send out an anxious motivational state (because events are unfolding as expected—things are okay). On the other hand, if events do not unfold as expected—the door is not locked or Rover is nowhere to be found—the hippocampus acts in a “not okay” mode. When functioning in not-okay mode, the hippocampus activates the septo-hippocampal circuit, generating an anxiety-ridden motivational state (high attention, arousal) that takes control over behavior.

Anti-anxiety drugs (e.g., alcohol, barbiturates) produce their calming effects by essentially quieting (turning off) the not-okay checking mode of the septo-hippocampal circuit (Gray, 1982). The brain’s natural anti-anxiety chemicals are the endorphins, as endorphins turn off the hippocampus’s “not-okay” control mode. Disappointment, failure, punishment, and novelty all stimulate the hippocampus to instigate anxiety-ridden behavioral inhibition (“not-okay” mode). Active coping attempts with environmental stressors, when successful, generate the release of endorphins. The endorphin release shuts down the septo-hippocampal circuit, instigates anxiety relief, and gives rise to positive counter-feelings (Gold & Fox, 1982; Gold, Pottash, Extein, & Kleber, 1980; Sweeney, Gold, Ryan, & Pottash, 1980). This complex action of anxiety and expected punishment being countered by pleasure and expected reward requires the integrated functioning of a limbic circuit, as some structures in the circuit regulate anxiety (hippocampus) whereas different structures in that same circuit regulate pleasure and positive affects associated with sex and sociability (septal area; MacLean, 1990).

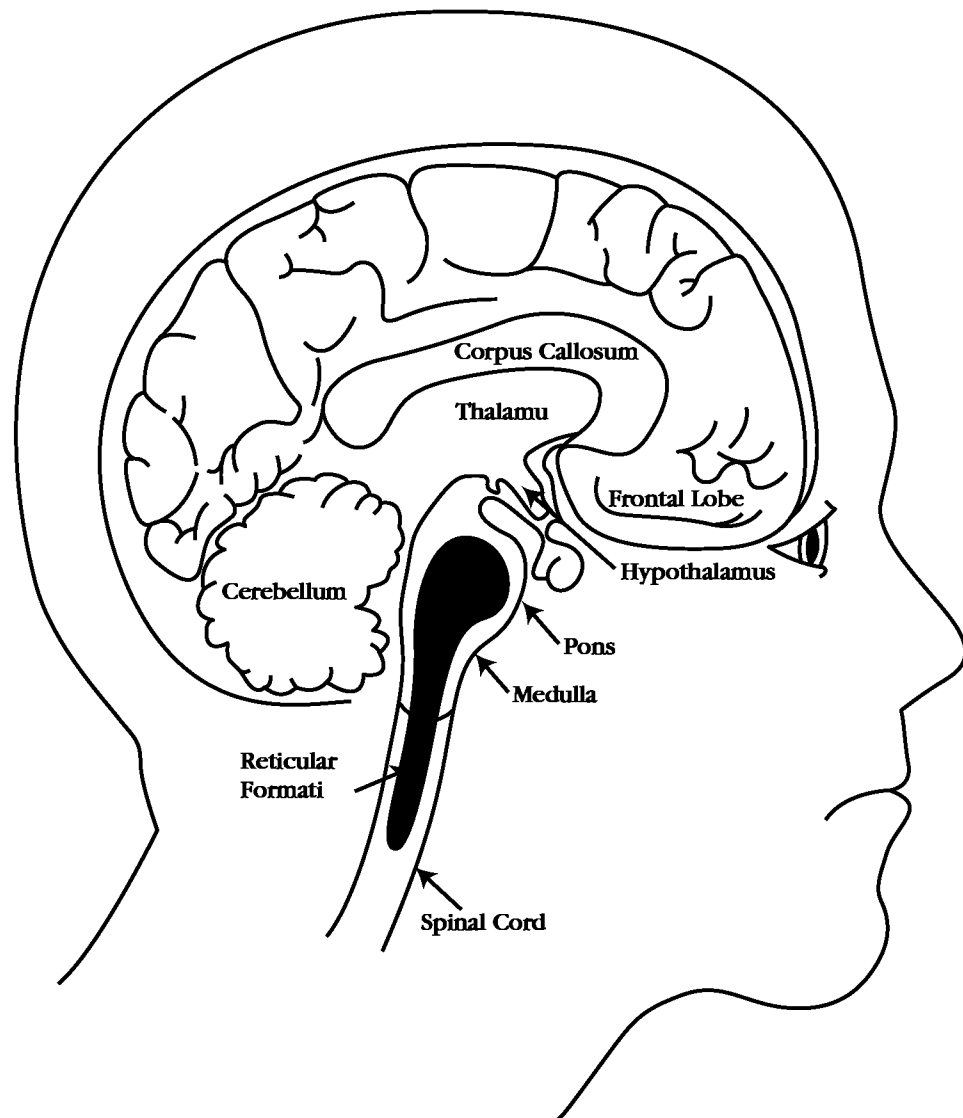
Anterior Cingulate Cortex

The anterior cingulate cortex is involved in the control of day-to-day mood, volition, and making choices. Decreased activity in the anterior cingulate cortex is associated with felt sadness and depression (Mayberg, 1997). The anterior cingulate cortex is important to volition and the mental activity underlying the act of making a choice (Paus, 2001). When researchers observe the flow of blood into and out of the anterior cingulate cortex area (using a PET scan), they observe greater blood flow activity during the consideration of many options in the act of making choices, compared to when the same person is involved in a routine, monotonous activity (Frith, Friston, Liddle, & Frackowiak, 1991).

Reticular Formation

The reticular formation plays a key role in arousal and in the process of awakening the brain’s motivational and emotional concerns. The reticular formation is a cluster of neurons about the size of your little finger within the brain stem (see Figure 3.8). It consists of two parts: the ascending reticular activating system and the descending reticular formation. The reticular activating system projects its nerves upward in the brain to alert and arouse the cortex, whereas the descending reticular formation projects its nerves downward to regulate muscle tone. Figure 3.8 uses a cat responding to a noise to illustrate that it is the reticular activating system that wakes, alerts, and arouses the cortex so it can process the incoming information. Once aroused, the alert cortex processes the incoming information (e.g., makes a decision about what to do) and, a second or two later, responds appropriately.

(a)



(b)

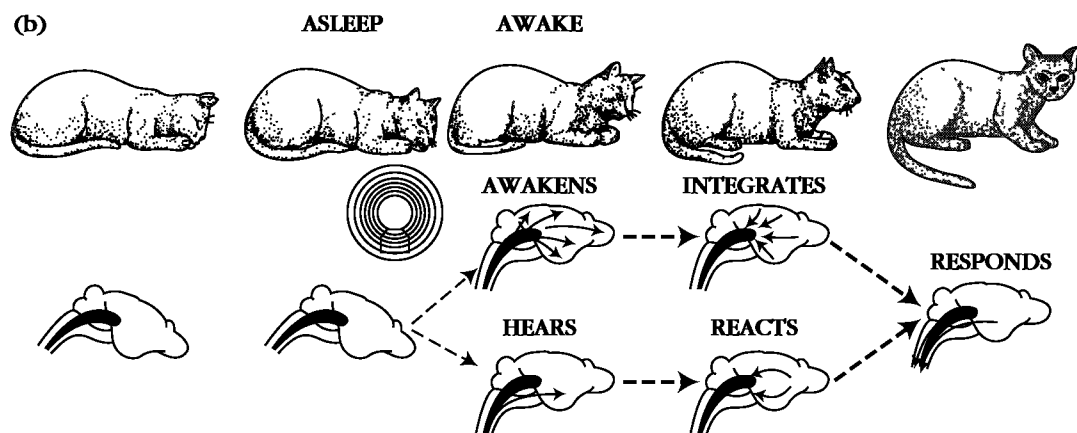


Figure 3.8 Anatomy (a) and Function (b) of the Reticular Formation

Source: Adapted from *The Reticular Formation*, by J.D. French, 1957, *Scientific American*, 196, 54–60.

Prefrontal Cortex and Affect

The limbic system receives incoming sensory stimulation (sights, smells, tastes) that activate rather automatic emotional reactions. In addition, however, the limbic system receives a good deal of input from the cerebral cortex. Because this is true, stimulation of the cortex can indirectly generate emotional states. The prefrontal lobes of the cerebral cortex lie immediately behind the forehead. One lobe is on the right side of the brain, while the other is on the left side. This right–left distinction is important because their activation generates qualitatively different emotional tone

In addition to this right–left distinction, there is also a medial prefrontal cortex (also called the “prelimbic cortex”). It plays a central role in the learning of response–outcome contingencies that underlie perceptions of control and mastery motivation. The learning of response–outcome contingencies, such as “When I study, I make good grades,” contributes importantly to goal-directed, outcome-seeking action.

The prefrontal cortex houses a person’s conscious goals (Miller & Cohen, 2001). These goals routinely compete against one another (goal to eat vs. goal to lose weight), and the two lobes of the prefrontal cortex wash these goals in a bath of emotion (Davidson, 2003). Thoughts that stimulate the right prefrontal cortex generate negative and avoidance-oriented feelings, whereas thoughts that stimulate the left prefrontal cortex generate positive and approach-oriented feelings (Gable, Reis, & Elliot, 2000; Sackeim et al., 1982). For instance, the sight of fear-provoking snakes lights up the right prefrontal cortex on a PET scan like a Christmas tree (Fischer, Andersson, Furmark, Wik, & Fredrikson, 2002; see their Figure 2, p. 238). The ensuing negative emotion then strongly colors which goals the person does and does not pursue.

In addition, basic personality differences exist between people, as some people have especially sensitive right prefrontal lobes that leave them vulnerable to negative emotionality, while others have especially sensitive left prefrontal lobes that leave them vulnerable to positive emotionality (Gable et al., 2000). Personality psychologists generally agree that two broad dimensions of personality exist. The first captures how sensitive versus insensitive a person is to incentives and the experience of positive emotion (i.e., extraversion); the second captures how sensitive versus stable a person is to threats, punishments, and the experience of negative emotion (i.e., neuroticism; Eysenck, 1991). Brain researchers use different terms from personality psychologists and refer to these personality dimensions as the behavioral activation system (BAS) and the behavioral inhibition system (BIS), respectively (Carver & White, 1994). To get an idea for these two dimensions of personality, consider your own reactions to the questionnaire items listed in Table 3.2. The first four items ask how sensitive you are to avoidance-oriented motivations (i.e., sensitivity to the “behavior inhibition system”). The last six items ask how sensitive you are to approach-oriented motivations, emotions, and behaviors, broken down into the three different subscales of reward responsiveness, drive, and fun seeking (i.e., sensitivity to the “behavior approach system”).

These two broad personality dimensions have a neurobiological basis. Some people show greater activity in their left prefrontal lobe (“left-side asymmetry”), whereas others show greater activity in the right prefrontal lobe (“right-side asymmetry”). People with relatively sensitive right prefrontal lobes—those who show greater right-side asymmetry—score high on the BIS items in Table 3.2, and they show a

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Table 3.2 Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS) Questionnaire Items**BIS Items**

1. If I think something unpleasant is going to happen I usually get pretty “worked up.”
2. Criticism or scolding hurts me quite a bit.
3. I feel pretty worried or upset when I think or know somebody is angry at me.
4. I feel worried when I think I have done poorly at something.

BAS Items

5. When I get something I want, I feel excited and energized.^a
6. When good things happen to me, it affects me strongly.^a
7. When I want something, I usually go all-out to get it.
8. I go out of my way to get things I want.^b
9. I will often do things for no other reason than that they might be fun.^c
10. I crave excitement and new sensations.^c

Note: BIS = Behavioral Inhibition System; BAS = Behavioral Activation System. In completing the questionnaire, respondents are asked to agree or disagree with each item using a 1 to 7 response scale (1 = strongly disagree, 7 = strongly agree). The BAS scale consists of three subscales: reward responsiveness (denoted by ^a above), drive (denoted by ^b above), and fun seeking (denoted by ^c above). The actual BIS/BAS Questionnaire contains 20 items, 7 BIS items and 13 BAS items, so the table shows only a part of the full questionnaire.

Source: Adapted from *Behavioral Inhibition, Behavioral Activation, and Affective Responses to Impending Reward and Punishment: The BIS/BAS Scales*, by C.L. Carver and T.L. White, 1994, *Journal of Personality and Social Psychology*, 67, 319–333. Copyright 1994 by American Psychological Association. Adapted with permission.

greater sensitivity to punishment, negative emotion, and avoidance-oriented behaviors. People with relatively sensitive left prefrontal lobes—those who show greater left-side asymmetry—score high on the BAS items in Table 3.2, and they show a greater sensitivity to reward, positive emotion, and approach-oriented behaviors.

The correlation between people’s scores on the BAS and BIS questionnaires and their prefrontal lobe asymmetry is important because the extent of people’s asymmetry corresponds to their typical emotionality (BAS vs. BIS; Sutton & Davidson, 1997). That is even without exposure to a live event, people show a personality-like style to be overly sensitive to negative or positive emotionality. Hence, how relatively active a person’s left prefrontal lobe is serves as a biological foundation of a personality oriented toward an eagerness and approach orientation, and how relatively active a person’s right prefrontal lobe is serves as a biological foundation of a personality oriented toward anxiety and an avoidance orientation.

NEUROTRANSMITTERS

Neurotransmitters act as chemical messengers within the brain’s central nervous system. Neurons communicate with one another through neurotransmitters, as an information-sending neuron releases a neurotransmitter so that its neighboring neuron can pick up that neurotransmitter and receive the message. A “neurotransmitter pathway” is a term that refers to a cluster of neurons and projections of nerve fibers that communicate with other neurons by using one particular neurotransmitter. The

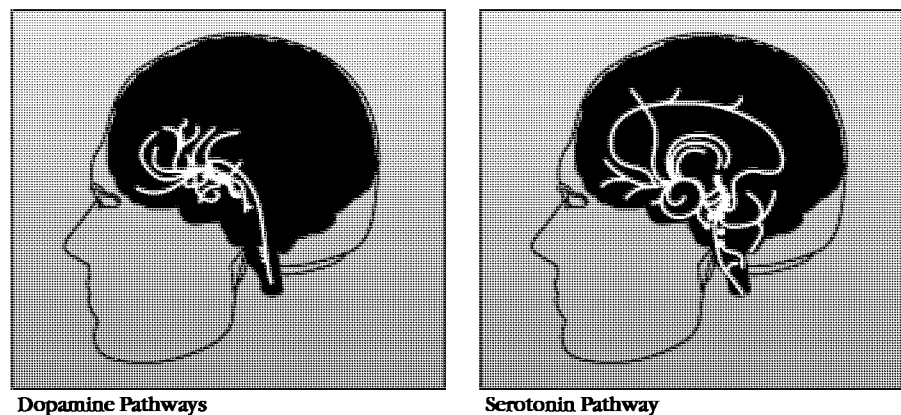


Figure 3.9 Two Neurotransmitter Pathways

Source: From *Mapping the Mind*, by R. Carter, 1998, Berkeley: University of California Press. Published by arrangement with Weidenfeld & Nicolson.

four motivationally relevant neurotransmitter pathways are (1) dopamine, which generates good feelings associated with reward (Montague, Dayan, & Sejnowski, 1996); (2) serotonin, which influences mood and emotion (Schildkraut, 1965); (3) norepinephrine, which regulates arousal and alertness (Heimer, 1995; Robbins & Everitt, 1996); and (4) endorphin, which inhibits pain, anxiety, and fear by generating good feelings to counter these negative feelings (Wise, 1989).

The anatomy of the serotonin and dopamine pathways appear in Figure 3.9. The dopamine pathway is particularly important to understanding motivation and emotion, as its primary motivational function is to generate positive feelings—an experience of pleasure or reward (Ashby, Isen, & Turken, 1999).

Dopamine

Dopamine release generates good feelings. As people go about their day, some level of dopamine is always present in the brain. But as people encounter a variety of events, those that signal reward and the anticipation of pleasure trigger neurons in the dopamine pathway to release dopamine into the synapses (Bozarth, 1991; Phillips, Pfaus, & Blaha, 1991). Such a dopamine release triggers an emotional positivity, and the resulting positive affect produces enhanced functioning, such as creativity and insightful problem solving (Ashby et al., 1999).

The finding that dopamine release generates positive feelings is a significant finding because, as people go about their day, they have many choices of what to do and what not to do. Part of the “want” to pursue one course of action over another is regulated by information provided by dopamine output from the ventral tegmental area (VTA). The VTA releases dopamine into other brain sites (e.g., prefrontal cortex) and the pattern of release is predictable in proportion to which the person expects and actually receives reward from a particular course of action. When events unfold in ways that are better than expected, an increased dopamine release serves as information that the particular course of action is producing more reward than it was anticipated to deliver. When events unfold in ways that are worse than expected, a decreased dopamine release serves

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as information that a particular course of action is producing less reward than it was anticipated to deliver (Montague et al., 1996).

Dopamine Release and Incentives

Incentives—stimuli that foreshadow the imminent delivery of rewards—trigger dopamine release in the brain (Mirenowicz & Schultz, 1994). Pleasure is the result of a rush of dopamine in the reward system. When you smell someone baking chocolate chip cookies in the oven, dopamine release occurs. It is not the eating of the cookies that causes the brain to release dopamine but is, instead, the anticipation of a rewarding meal that triggers dopamine release. Because dopamine release occurs with the anticipation of reward, it therefore participates in the preparatory phases of motivated behavior, including, for instance, an erection that precedes sexual activity or heightened attention to the kitchen upon the smell of chocolate chip cookies. For this reason, we often experience more pleasure in thinking about engaging in sex or eating cookies than we do when actually engaging in sex or munching on the cookies. If things go better than expected during the mating or eating, however, then the dopamine release continues and so does its corresponding positive state of feeling good.

As a person moves through his or her environment, a variety of stimuli invariably impinge upon the senses (e.g., seeing different people, hearing laughter, examining different fruits at a farmer's market). Some of those events are biologically significant to the person (i.e., those related to hunger, thirst, mating), and when they foreshadow the possibility of reward, dopamine release occurs and motivates the person to prepare to take action to secure the environmental event. If dopamine release did not occur, we would not perceive any of the events that surround us as attractive, and we would not prepare ourselves to approach them.

Dopamine Release and Reward

Dopamine release not only signals the prospect of forthcoming reward, dopamine release also teaches us which events in the environment are rewarding. That is, dopamine release explains the experience of reinforcement and, hence, the biology of reward. If an environmental event is to acquire—and continue to maintain—incentive motivational properties, then dopamine release needs to occur (Beninger, 1983). In a sense, the objects and events that bring us pleasure are those with a dopamine-dependent history that has established a particular object or event as a reinforcer. That said, the experience of pleasure in humans is only loosely correlated with dopamine activation (Drevets et al., 2001), so what reinforces our behavior is more dopamine dependent than it is subjective pleasure (Volkow et al., 1999). That is, the dopamine-release event is the reinforcer rather than the more epiphenomenal experience of felt pleasure.

Dopamine release is greatest when rewarding events occur in ways that are unpredicted (“Wow, I’m surprised how nice that flower smells”) or underpredicted (“Wow, that flower smells much nicer than I thought it would”) (Mirenowicz & Schultz, 1994). Hence, it is not so much the occurrence of a rewarding event that generates good feelings as it is the occurrence of unpredicted or unexpected reward (Schultz, Apicella, Scarnati, & Ljungberg, 1992). Dopamine release following unexpected reward allows people to

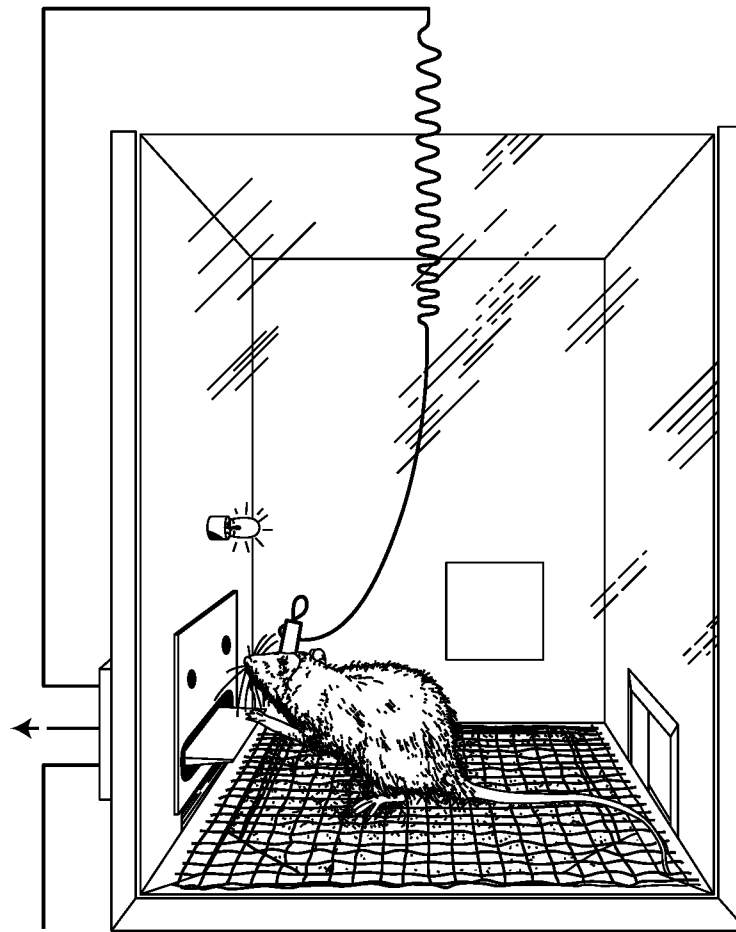


Figure 3.10 Illustration of the Intracranial Self-Stimulation Procedure

Note. When the rat presses down on the lever, the lever press activates a microswitch to send a mild electrical impulse to be sent through the wire into the rat's brain via an implanted electrode. With such a procedure, the rat has the means to deliver self-induced stimulation to its brain.

Source: From *Pleasure Centers in the Brain*, by J. Olds, 1956, *Scientific American*, 195, 105–106.

learn that event's motivational significance. And because dopamine release defines an event as a rewarding event, the person learns that this event, when encountered in the future, will likely produce a rewarding experience. Thus, activation of the dopamine pathway plays a significant role in the biology of reward.

The evidence that stimulation of the dopamine pathway creates an experience of reward comes from studies on intracranial self-stimulation and drug self-administration (Figure 3.10) (Bozarth, 1991). Researchers can implant an electrode into an animal's brain that, when stimulated, can either send a mild electrical current to stimulate that brain structure (intracranial stimulation) or deliver a small dosage of a particular drug (drug administration). In either case, animals are placed into a cage in which they can down-press the lever with their front paws. Pressing the lever activates a microswitch that either administers the mild electrical stimulation or the small drug dosage. Because the animal controls when the brain is stimulated (because it is the animal's choice whether or not to press down the lever), the animal can engage in intracranial self-stimulation

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and/or drug self-administration. Research on intracranial self-stimulation shows that animals will press the lever to stimulate brain structures associated with dopamine release. Research with drug self-administration shows that animals will press the lever to receive psychostimulant drugs such as amphetamine and cocaine (Roberts, Corcoran, & Fibiger, 1977). Because animals engage in intracranial self-stimulation and drug self-administration when the implants are located in the dopamine pathway, researchers infer that dopamine release is pleasurable and rewarding.

Dopamine and Motivated Action

Dopamine release is associated with two brain events (Wise, 2004). First, dopamine release generates positive feelings, as discussed above. However, dopamine release also activates voluntary goal-directed approach responses. The dopamine pathway includes an interface with the body's muscular/motor system via the nucleus accumbens, which is the brain structure involved in the release of locomotion involved in goal-directed behavior (Kelley & Stinus, 1984). Thus, stimulation of the dopamine pathway increases the likelihood of approach behavior (Mogenson, Jones, & Yim, 1980)—partly because good feelings create approach motivation but also partly because activation of the motor system releases goal-directed approach behavior. Once dopamine release has initiated approach behavior toward the rewarding event, the person's approach behavior continues and more often than not actually increases in vigor until the goal is attained. To continue the example of the chocolate chip cookies, dopamine release generates not only positive feelings but also the motivated search behavior necessary to find and consume the desired food.

Overall, then, as events come and go during the day, the brain detects some events as “biologically significant” and releases dopamine that generates good feelings and goal-directed approach behavior. Furthermore, the pleasurable experience of dopamine allows the person to learn which environmental events are associated with pleasure and approach and which other environmental events are associated with stress and withdrawal. Dopamine release is therefore a neural mechanism by which motivation gets translated into action (Mogenson et al., 1980).

Addictions

Addictive drugs, such as psychostimulants, are especially potent reinforcers because their repeated usage produces hypersensitivity to dopamine stimulation. By hypersensitive, it is meant that addictive drugs sensitize the brain structures, such as the nucleus accumbens, to dopamine stimulation to a greater degree than do naturally occurring rewards, such as good food (Di Chiara, 1998). Many addictive drugs, such as cocaine, heroin, amphetamine, alcohol, and nicotine, cause dopamine-induced neural hypersensitization, and once this occurs, it can last for years (Hyman & Malenka, 2001; Robinson & Kolb, 1997). Some currently marketed pharmaceuticals help smokers quit the habit by taking the dopamine-related pleasure out of smoking and nicotine. These prescription drugs are somewhat helpful in that they take away some of the “liking” out of nicotine, though much of the “wanting” remains.

Liking and Wanting

Wanting is a motivational state that occurs prior to receiving a reward, while liking is a motivational state that occurs after reward receipt (Berridge & Robinson, 1995). Wanting and liking typically go hand-in-hand, but the two motivational experiences actually have different brain mechanisms (Berridge & Robinson, 1998; Dickinson & Balleine, 2002). Liking is, essentially, hedonic pleasure, and it motivates behavior by acting as information when people compare competing choices. Wanting can occur without liking, as sometimes people can want what they do not necessarily like. Wanting without liking, however, is only partial reward that occurs without sensory pleasure (e.g., nicotine addiction). For the full experience of reward, wanting and liking need to occur together.

HORMONES IN THE BODY

While many hormones underlie motivation, emotion, and behavior, three are integral to motivation and emotion: cortisol, testosterone, and oxytocin.

Cortisol is the so-called “stress hormone.” When exposed to a stressor, a person’s hypothalamic–pituitary–adrenocortical system reacts, including the release of the hormone cortisol from the adrenal gland. Cortisol activation is most likely in the face of social-evaluative threats, such as the presence of an evaluative audience during the performance of a task (e.g., public speaking) and almost any effort to negotiate one’s social status when it is in doubt or challenged (Dickerson & Kemeny, 2004). Its rise in response to stress is important because elevated cortisol has been associated with poor intellectual functioning, negative affect, and poor health outcomes (Brown & Suppes, 1998; Kirschbaum, Wolf, May, Wippich, & Hellhammer, 1996).

The steroid hormone *testosterone* is associated with high sexual motivation (Bancroft, 2002). Testosterone underlies the mating effort—the investment of time and energy into same-sex competition and mate-seeking behavior (Ellison, 2001). As with mate competition, testosterone encourages competition more generally. For instance, high testosterone levels help Wall Street stockbrokers make more money (compete better) during the day’s trading. As a hormone, testosterone is responsive to changing environmental conditions, such that married men have lower testosterone than do unmarried men (Gray, Chapman, Burnham, Lipson, & Ellison, 2004), and men in committed relationships have lower testosterone than men not in relationships (Burnham et al., 2003). From this line of reasoning, it makes sense that high levels of testosterone are associated with having affairs, while low levels are associated with better parenting (e.g., higher nurturance).

Oxytocin, known as the bonding hormone, is often referred to as the “tend and befriend stress response” that helps explain why people seek counsel and confide in friends during the stressful events in their lives. Oxytocin is a particularly important hormone-based source of motivation for women, as it motivates a third possible—and highly effective—coping response beyond just “fight or flight”—namely, seeking the counsel, support, and nurturance of others during times of stress.

THE WORLD IN WHICH THE BRAIN LIVES

Brain research generally relies on artificial methods of stimulating the brain’s motivational and emotional states (as depicted in Figures 3.4, 3.6, and 3.10). Such research generally

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BOX 3

applies a mild electrical current or chemical agent (drug, neurotransmitter, hormone) to a particular brain site to investigate the role that brain structure plays in motivation. This research allows us to collect the sort of information summarized in Table 3.1, such that we know that the medial forebrain bundle is a pleasure center, the amygdala is a fear center, and so on for each particular brain structure. What these research studies do not

tell us, however, is how day-to-day events in the social world naturally stimulate these brain structures to generate the motivation and emotion we use to adapt to the world around us.

Motivation Cannot Be Separated from the Social Context in Which It Is Embedded

People have needs, such as those for survival, growth, and well-being. And the social world offers an environment full of supports for and threats against these needs. For instance, the weather can be warm and support our well-being, or it can be too cold or too hot and threaten our well-being. A relationship can be warm and nurturing, or it can be cruel and neglecting. The brain is the means by which we generate the motivational and emotional states we need to adapt optimally to the physical and social world around us. So, to answer questions such as “How can I motivate myself?” and “How can I motivate others?”, we can use our knowledge of the brain to create social environments that function as natural stimulants to the motivated and emotional brain.

For instance, consider the natural stimulants of motivational brain structures discussed throughout the chapter. Food deprivation explained the rise and fall of ghrelin and leptin hormones. Signals of reward and unexpectedly positive events—a pleasant smell, a gift, a humorous movie—explained dopamine release. Alarm clocks and roller-coaster rides aroused the reticular formation. Threats such as predators, bullies, enemies, and hostile opponents stimulated the amygdala. Disappointment, failure, punishing toothaches, novelty, and separation from our loved ones stimulated the “not-okay” mode of the hippocampus, just as successfully coping with these aversive events stimulated the release of endorphins and a pleasurable return to the “okay” mode. And drugs such as cocaine and amphetamines stimulated pleasure centers in the limbic system. What all these examples illustrate is that environmental events in the social world act as the natural stimulants of the brain’s basic motivational processes (e.g., pleasure, anxiety, arousal, and mood).

So, while brain researchers conduct studies to artificially stimulate and change animals’ motivational states, researchers in the schools, workplace, clinics, and athletic fields know that the individual’s motivational state cannot be separated from the social context in which it is embedded. Though we know how the brain generates its motivational states, we also know that the motivation experienced by students, athletes, patients, children, and workers is inherently intertwined with the social context provided to them by their teachers, coaches, doctors, parents, and workplace supervisors. This chapter presented the fundamentals of the motivated and emotional brain. The chapters to come present how the social context provides natural stimulations that stir the motivated and emotional brain into action.

We Are Not Always Consciously Aware of the Motivational Basis of Our Behavior

The study of the motivated and emotional brain makes salient one final point about human motivation, namely that we are not always consciously aware of the motivational basis of our behavior. Motives vary in how accessible they are to consciousness and to verbal report. Some motives originate in language structures and the cerebral cortex (e.g., goals) and are thus readily available to our conscious awareness (e.g., “I have a goal to sell three insurance policies today.”). For these motives, if you ask a person why he or she selected

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that particular goal, the person more often than not can confidently list the rational and logical reasons for doing so. Despite the fact that people can frequently provide prompt and satisfying motives to explain their behaviors, some motivated acts are impulsive and the reasons we do what we do are not clear, even to us. Some motives have their origins in nonlanguage structures and are thus much less available to conscious awareness and to verbal report. Not many people, for instance, say they feel hungry because of low leptin in the bloodstream. These are the motives that originate in the emotional limbic structures rather than in the language-based cerebral cortex. These motives exist in our awareness only as urges, appetites, and wants.

Many experimental findings can be offered to make the point that motives can and do originate in the unconscious limbic structures rather than in the conscious cerebral cortex. Consider that people who feel good after receiving an unexpected gift are more likely to help a stranger in need than are people in neutral moods (Isen, 1987). People are more sociable on a sunny day than they are on a cloudy day (Kraut & Johnston, 1979). People commit more acts of violence in the summer months than at other times of the year (Anderson, 1989). Major league baseball pitchers are more likely to intentionally hit batters on the opposing team when the temperature is hot rather than when the temperature is cold or moderate (Reifman, Larrick, & Fein, 1991). In each of these examples, the person is not consciously aware of why he or she committed the social or antisocial act. Few people, for instance, would say they helped a stranger because they felt good, and few would say they commit murder or throw baseballs at the heads of opponents because of the hot temperature. Still, these are conditions that cause motivations. The brief lesson behind these empirical examples is that the motives, cravings, appetites, desires, moods, needs, and emotions that regulate human behavior are not always immediately obvious or consciously accessible.

CONCLUSION

A half century ago, a young neuroscientist, James Olds, was doing his routine laboratory work by implanting an electrode in the brain stem of a rat. One fateful day, the electrode Olds was implanting accidentally bent and ended up in another part of the brain. Not knowing that the electrode had bent, Olds stimulated the rat and watched with amazement as the rat suddenly repeated its behavior and continued enthusiastically to return to the part of the cage where the earlier electrical brain stimulation occurred. The rat liked the stimulation. In fact, the rat *really* liked the stimulation. Follow-up studies showed that animals given the opportunity to stimulate themselves would do so (by pressing a lever that would send an electrical current to their own brain; see Figure 3.10). Olds's research would soon confirm that he had accidentally discovered a pleasure center in the rat's brain (Olds & Milner, 1954).

Researchers soon began to intentionally bend their electric probes as they started the field of neuroscience down its path toward understanding the neural basis of pleasure and aversion (Hoebel, 1976; Olds & Fobes, 1981; Wise & Bozarth, 1984). First, specific brain structures such as the septal area, hypothalamus, mammillary bodies, and medial forebrain bundle were identified as important to the motivational process (Olds & Olds, 1963). Then, the consensus converged on the idea that motivational experiences (e.g., pleasure, aversion) were not localized in any one specific brain structure but were

instead coordinated among many brain areas known as neural circuits, such as those found in the limbic system (Isaacson, 1982). Later research extended the study of brain circuits to include the study of chemical circuits or pathways in which various brain sites communicated through one specific neurotransmitter, such as dopamine. These efforts to map out the motivational significance of specific brain structures, neural circuits, and chemical pathways allowed researchers to understand how the brain creates, maintains, and regulates motivation, emotion, and mood. In the chapters to come, the emphasis will switch to the motivational significance of external events, relationships, and complex environments such as classrooms. Hence, the contents of this chapter allow us to understand the biology and the neuroscience underlying and supporting the motivational states yet to be discussed.

SUMMARY

When thinking about the brain, most people focus their attention on its cognitive and intellectual functions, including thinking, learning, and decision making. But the brain is not only an agent of thought, it is further an agent of motivation and emotion. It is the brain that generates cravings, appetites, needs, desires, pleasure, and the full range of the emotions. To illustrate how the brain creates, maintains, and regulates motivational and emotional states, consider the following three principles that organize how motivational researchers study the brain. First, specific brain structures (e.g., hypothalamus, amygdala) generate specific motivational states. Second, biochemical agents (e.g., neurotransmitters, hormones) stimulate these brain structures. Third, day-to-day events (e.g., a letter from a friend, dense traffic) are the events in our lives that stir brain-stimulating biochemical agents into action.

Looking inside the brain with techniques like surgery and fMRI (functional magnetic resonance imaging) yield a map of the anatomical location of several key brain structures related to motivation and emotion. The brain structures associated with positive feelings and approach motivation include the hypothalamus, medial forebrain bundle, septal area, orbitofrontal cortex, nucleus accumbens, medial prefrontal cortex, and left prefrontal cortex. The brain structures associated with negative feelings and avoidance motivation include the amygdala, hippocampus, and right prefrontal cortex. For instance, stimulation of the medial forebrain bundle leads people to report positive feelings and animals to behave in ways as if they had just received positive reinforcement. Stimulation of the amygdala leads people to report negative feelings and to show the behavioral activation associated with a coordinated fear response.

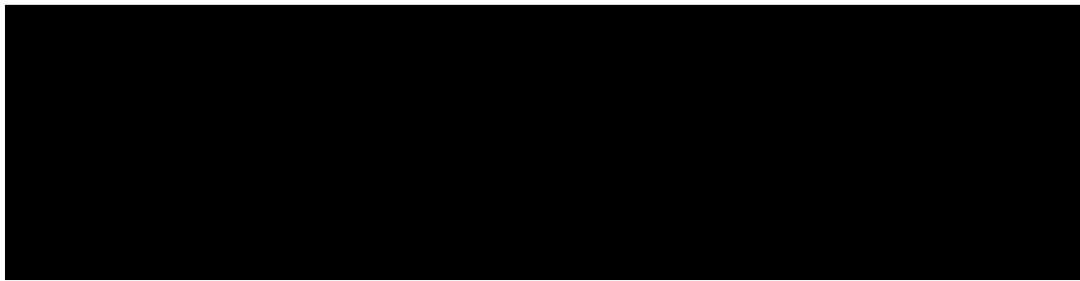
Neurotransmitters act as chemical messengers within the brain, and a “neurotransmitter pathway” refers to a cluster of neurons that communicate with one another by using one particular neurotransmitter. The four motivationally relevant neurotransmitter pathways are dopamine, serotonin, norepinephrine, and endorphin. The dopamine pathway is particularly important as its primary motivational function is to generate positive feelings and it explains the biology of incentives, reward, motivated action, addictions, and liking versus wanting. Upon encountering motivationally significant events, the brain detects some events as “biologically significant” and releases dopamine that generates good feelings and stimulates goal-directed approach behavior. Furthermore, the pleasurable experience of dopamine allows the person to learn which environmental events are associated with pleasure and approach and which other environmental events are associated with stress and withdrawal. Dopamine release is therefore a neural mechanism by which motivation is translated into action. Like neurotransmitters, hormones underlie motivation and action, including cortisol (the stress hormone), testosterone (the mating hormone), and oxytocin (the tend-and-befriend stress hormone).

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The purpose of this chapter was not to overwhelm the reader with neurophysiological terminology. Instead, it was to lift the veil of mystery of just what the brain does to generate and maintain motivational and emotional states. The final two points of emphasis were that (1) motivation cannot be separated from the social context in which it is embedded and (2) we are not always consciously aware of the motivational basis of our behavior. In the remaining chapters the emphasis switches to understanding how external events, relationships, and complex environments such as classrooms stir the brain to experience motivation and emotion.

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Chapter 4

Physiological Needs

NEED

- Need Structure

FUNDAMENTALS OF REGULATION

- Physiological Need
- Psychological Drive
- Homeostasis
- Negative Feedback
- Multiple Inputs/Multiple Outputs
- Intraorganismic Mechanisms
- Extraorganismic Mechanisms
- The Homeostatic Mechanism: The Wisdom of the Body

THIRST

- Physiological Regulation
 - Thirst Activation
 - Thirst Satiety
 - Hypothalamus and Kidneys
- Environmental Influences

HUNGER

- Short-Term Appetite
- Long-Term Energy Balance
- Comprehensive Model of Hunger Regulation
- Environmental Influences
 - Restraint-Release Situations
 - Cognitively Regulated Eating Style
 - Weight Gain and Obesity
- Set Point or Settling Points?

SEX

- Physiological Regulation
- Facial Metrics
- Sexual Scripts

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Sexual Orientation

Evolutionary Basis of Sexual Motivation

FAILURES TO SELF-REGULATE PHYSIOLOGICAL NEEDS

SUMMARY

READINGS FOR FURTHER STUDY

Consider the following proposal: You are invited to participate in an experiment. The researcher promises that you will be paid handsomely for your effort. All you have to do is try to gain 10% of your present body weight. It sounds easy and profitable enough, so you accept. At first, all goes well and you gain 4 pounds in week 1 and 2 more in week 2. By week 3, however, your appetite wanes, food is losing its appeal, and your body seems to be putting up defenses to counter the weight gain. As you eat surplus food, you are surprised by how uncomfortable you feel. Plus, your active lifestyle has slowed to a sedentary pace, as you exercise less and use elevators more. It becomes increasingly difficult to gain another pound, let alone the 9 still needed to achieve your 10% increase. It takes 2 months, but you gain the 10%.

With time, your body weight, appetite, and lifestyle recover. But, alas, the experimenter has another offer. This time, she wants to see if you can lose 10% of your body weight. Confident in your previous success, you accept and begin a strict diet. While too much food took away your appetite, the food deprivation is just plain miserable. Gone are the body's kind and gentle defenses. This time your body is not fooling around. You feel cranky and irritable, and your appetite is forever at the center of your attention. After 2 months of continual effort, you begin to realize that you might be in over your head on this one. The more you restrain yourself and the more you ignore your bodily cues to eat, the gruchier you feel and the more tempting high-calorie food seems. The constant irritation is also getting in the way of your daily functioning. So you telephone the experimenter to call off the study after a month of futility. A return to your normal weight coincides with the departure of your misery and midnight fantasies of pizza and cookies.

After the experiments are over, two things have changed. On the one hand, you have a lot more money. But on the other hand, you think about hunger, eating, and weight control a little differently. Your experience shows that the body has a predispositional, somewhat automated guide to how much it should weigh. The body does, indeed, feature many self-regulatory guides, and when these guides are upset, ignored, or outright rejected, motivational states arise. Such motivational states (e.g., hunger, misery) will continue, and intensify, until the individual acts to correct the upset regulatory guides. Thus, the thesis of the present chapter is that physiological needs, biological systems, motivational states, and behavior act in concert with one another to achieve stable physiological regulation.

A similar study was conducted with animals, and the results appear in Figure 4.1. For the first 30 days, all animals received a normal diet. Starting at day 30 (point #1), some animals were force-fed (line a), some animals were placed on a restricted diet (line c), while other animals continued to receive their normal diet (line b). Three weeks later

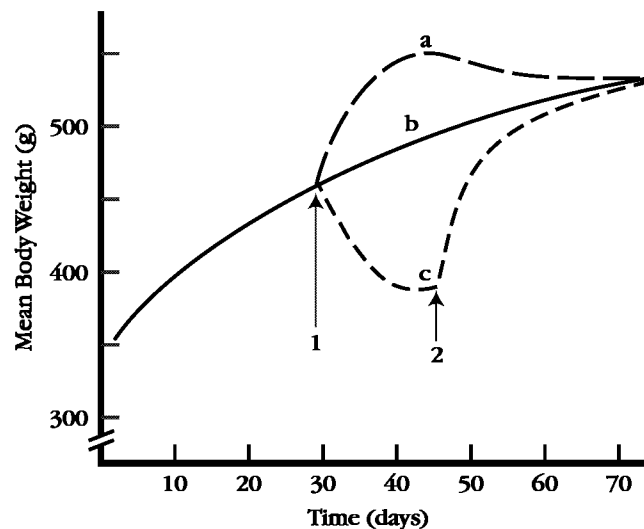


Figure 4.1 Fluctuations in Body Weight Over Time for Force Fed (a), Normally Fed (b), and Food Deprived (c) Animals

Source: From *The Role of the Lateral Hypothalamus in Determining the Body Weight Set Point*, by R. E. Keeseey, P. C. Boyle, J. W. Kemnitz, & J. S. Mitchel, 1976, in D. Novin, W. Wyrwicka, & G. A. Bray (Eds.), *Hunger: Basic mechanisms and clinical implications* (pp. 243–255). New York: Raven Press.

(day 48; point #2) all animals were returned to their normal diets. As you would expect, the force-fed animals gained a lot of weight during days 30–48, while the restricted-diet animals lost a lot of weight. With the return of the normal diet (on day 48), the force-fed animals showed little hunger and ate sparingly, while the starved animals showed great hunger and ate voraciously. By day 75, however, the three groups of animals all weighed about the same. That is, irrespective of whether they were force-fed or starved, the animals motivationally adapted to their condition, and these motivational states allowed them eventually to return back to their normal body weights.

NEED

A need is any condition within the person that is essential and necessary for life, growth, and well-being. When needs are nurtured and satisfied, well-being is maintained and enhanced. If neglected or frustrated, the need's thwarting will produce damage that disrupts biological or psychological well-being. Motivational states therefore provide the impetus to act before damage occurs to psychological and bodily well-being.

Damage can be to the body, so motives arise from physiological needs to avoid tissue damage and to maintain bodily resources (e.g., thirst, hunger, and sex). Damage can be to the self, so motives arise from psychological needs to orient one's development toward growth and adaptation (e.g., autonomy, competence, and relatedness). Damage can also occur to one's relationship to the social world, so motives arise from social needs to preserve our identities, beliefs, values, and interpersonal relationships (e.g., achievement, affiliation, intimacy, and power). Together, physiological, psychological, and social needs provide a range of motives that serve the individual's overall life, growth, and well-being.

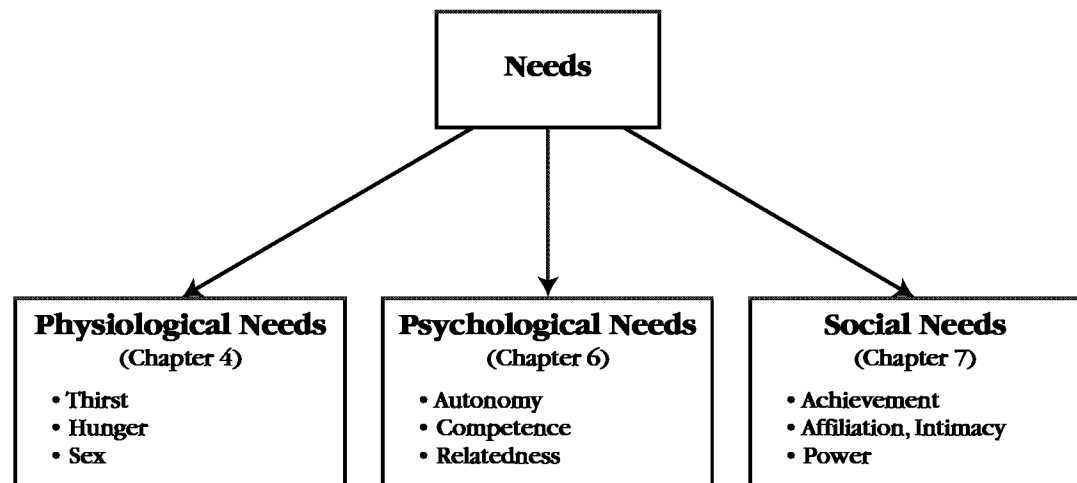


Figure 4.2 Types of Needs

Need Structure

Types of needs exist. These types can be organized within a need structure, as illustrated in Figure 4.2. Physiological needs (thirst, hunger, sex) are inherent within the workings of biological systems (this chapter). Psychological needs (autonomy, competence, relatedness) are inherent within the strivings of human nature and healthy development (Chapter 6). Social need (achievement, intimacy, power) are internalized or learned from our emotional and socialization histories (Chapter 7).

The distinction between physiological and psychological needs is a relatively easy one to make, but the distinction between psychological and social needs is more subtle. Psychological needs (autonomy, competence, relatedness) exist within human nature and are, therefore, inherent in everyone. Three such organismic needs are autonomy, competence, and relatedness. Social needs arise from our unique personal experiences and thus vary considerably from one person to the next. The social needs we acquire (achievement, affiliation, intimacy, power) depend on the type of social environment in which we were raised, currently live in, and attempt to create for our future self.

Physiological needs involve biological systems such as neural brain circuits, hormones, and bodily organs. When unmet for an extended period, physiological needs constitute life-threatening emergencies and therefore generate motivational states that can dominate consciousness. When gratified, their salience fades, and these needs are forgotten about, at least for a while. Psychological and social needs involve central nervous system processes. Instead of conforming to a cyclical time course (rise, fall, and rise again) like physiological needs do, psychological and social needs are forever present in consciousness, at least to a degree. They gain salience in consciousness mostly in the presence of the environmental conditions the individual believes are capable of involving and satisfying these needs. For instance, hanging out with friends makes the need for affiliation salient, while being bossed around frustrates a person's need for autonomy.

All needs generate energy. How one need differs itself from another is through its directional effects on behavior (Murray, 1937). For instance, a hunger need is different

from a thirst need, not in the amount of energy it generates but in its ability to direct attention and action toward seeking out food rather than water. Similarly, a competence need is different from a relatedness need not in the amount of motivation aroused but in the ensuing desire to seek out optimal challenges rather than intimate relationships.

Another way that needs differ from one another is that some generate deficiency motivation whereas others generate growth motivation (Maslow, 1987). With deficiency needs, life goes along just fine until some state of deprivation (i.e., it's been 10 hours since your last meal) activates a need to interact with the world in a way that will quiet the deficit (i.e., consume food). With growth needs, motivational states energize and direct behavior to advance development (seek out challenges, improve interpersonal relationships). The telltale sign to differentiate a deficiency-based need from a growth-based need is by the emotions each generates. Deficiency needs typically generate tension-packed, urgency-laden emotions, such as anxiety, frustration, pain, stress, and relief. Growth needs typically generate positive emotions, such as interest, enjoyment, and vitality.

FUNDAMENTALS OF REGULATION

A half century ago, Clark Hull (1943) created a biologically based theory of motivation referred to as drive theory (see Chapter 2). According to drive theory, physiological deprivations and deficits (e.g. lack of water, food, and sleep) create biological needs. If the need continues unsatisfied, the biological deprivation becomes potent enough to occupy attention and generate psychological drive. “Drive” is a theoretical term used to depict the psychological discomfort (felt tension and restlessness) stemming from the underlying and persistent biological deficit. Drive energizes the animal into action and directs that activity toward those particular behaviors that are capable of servicing (satisfying) bodily needs.

Figure 4.3 illustrates the physiological need—psychological drive—behavioral action process. After drinking a glass of water or having breakfast, an individual experiences a satiated (i.e., full) biological condition in which neither thirst nor hunger is of motivational consequence, as depicted in (1). As time goes by, the individual evaporates water and expends calories. With this naturally occurring loss of water and nutrients, physiological imbalances or deficits begin to accumulate (2). If the physiological imbalances persist and intensify, then continued deprivation produces a bodily need for water or calories (3). In time, the physiological need intensifies enough to produce felt tension and restlessness, which is the psychological drive (4). Once motivated by drive, the person engages in goal-directed action (5). When the thirsty person finds and drinks water, or when the hungry person locates and consumes food, consummatory behavior occurs (6). The water and food intake satisfies and removes the underlying bodily need, which quiets the psychological drive, through a process called drive reduction (7). Following drive reduction, the individual returns to a satiated (i.e., unmotivated) state (1) and the whole cyclical process begins to play itself out again.

The cyclical pattern depicting the rise and fall of psychological drive (Figure 4.3) involves seven core processes: need, drive, homeostasis, negative feedback, multiple inputs/multiple outputs, intraorganismic mechanisms, and extraorganismic mechanisms.

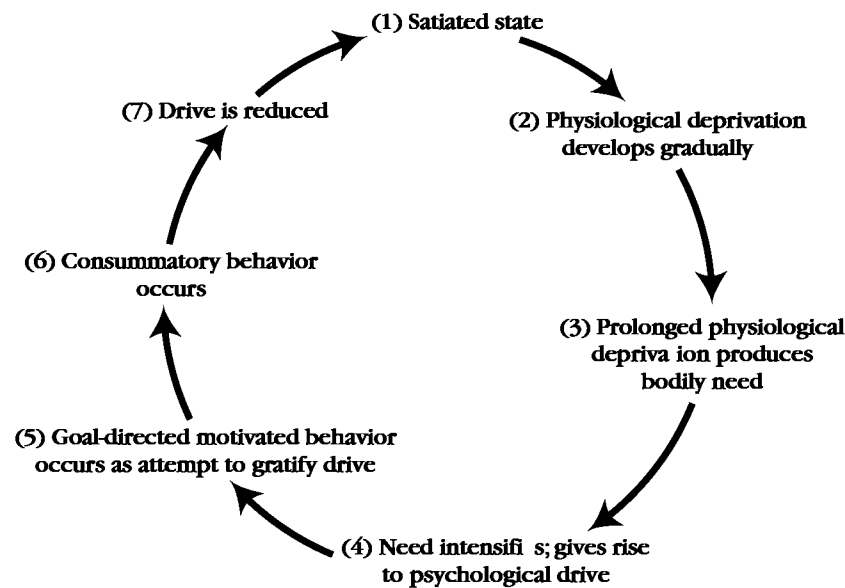


Figure 4.3 Model of Need-Drive-Behavior Sequence

Physiological Need

Physiological need describes a deficient biological condition. Physiological needs occur with tissue and bloodstream deficits, as from water loss, nutrient deprivation, or physical injury. If neglected, bodily harm or pathology follows. Hence, physiological needs, when unmet and intense represent life-threatening emergencies.

Psychological Drive

Drive is a psychological, not a biological, term. It is the conscious manifestation of an underlying unconscious biological need. Drive, not the underlying physiological needs per se, has motivational properties. For instance, appetite (psychological drive), not low blood sugar or shrunken fat cells (physiological need), energizes and directs behavior. When salient enough to grab the individual's attention, drive motivationally readies the individual to engage in goal-directed behaviors capable of yielding drive reduction.

Homeostasis

Bodily systems show a remarkable capacity for maintaining a steady state of equilibrium. This is true even as these systems perform their functions and are exposed to widely differing and stressful environmental conditions. The term that describes the body's tendency to maintain a stable internal state is homeostasis. The bloodstream, for instance, shows a remarkable constancy in its level of water, salt, sugar, calcium, oxygen, temperature, acidity, proteins, and fats (Cannon, 1932; Dempsey, 1951). People constantly face changing external and internal environments, however, and the mere passage of time can bring conditions of deprivation. Or, people eat, drink, and sleep to excess. Hence, bodily systems are inevitably and continually displaced from homeostasis either by changes

in environmental conditions or by one's own consummatory behaviors. Homeostasis is essentially the body's ability to return a system (i.e., bloodstream) to its basal state. To do so, bodily systems generate motivational states. Thus, the body has both a tendency to maintain a steady state as well as the means to generate the motivation necessary to energize and direct homeostasis-restoring behaviors.

Negative Feedback

Negative feedback refers to homeostasis' physiological stop system (Mook, 1988). People eat and sleep but only until they are no longer hungry or sleepy. Drive activates behavior; negative feedback stops it.

Without feedback and without a way of inhibiting drive-motivated behavior once the underlying need was satiated, human beings would be like the fabled sorcerer's apprentice (from Dukas's poem popularized by Walt Disney's *Fantasia*; Cofer & Appley, 1964). As the story goes, the apprentice, by imitating the sorcerer, learned how to command a broom to bring a bucket of water. The broom obeyed and brought the apprentice a bucket of water. After a couple of buckets, the apprentice had enough water, but the broom continued to bring bucket after bucket after bucket. Most regrettably, the apprentice forgot to learn how to command the broom to quit bringing water. Were the body unable to inhibit a drive, bodily disaster would result. If people were unable to shut off hunger, they might literally eat themselves to death.

Negative feedback systems actually signal satiety well before the physiological need is fully replenished (Adolph 1980). At first, people eat and drink rapidly, but the rate of eating and drinking decreases quickly over the course of a meal (Spitzer & Rodin, 1981). As people digest food and water, the body displays an amazing aptitude to estimate how much of the food or water, when transformed and transplanted, is needed to gratify the underlying physiological need. During drinking, for example, the body continuously monitors the volume of fluid ingested on each swallow and uses that information to predict how much water will eventually make its way into the bloodstream and bodily cells. Understanding precisely how the body signals satiety constitutes the study of negative feedback systems.

Multiple Inputs/Multiple Outputs

Drive has multiple inputs, or means of activation. One can feel thirsty, for example, after sweating, eating salty foods, or donating blood, in response to electrical stimulation of a particular brain structure, or at a particular time of day. In much the same way, drive has multiple outlets, or behavioral responses, that satisfy the drive. When cold, a person can put on a jacket, turn up the furnace, engage in vigorous exercise, or shiver. Each of these behaviors achieves the same end result—a raised body temperature. The basic idea is that drive arises from a number of different sources (inputs) and motivates a number of different goal-directed behaviors (outputs).

The convergence of multiple inputs with multiple outputs, shown in Figure 4.4, is actually what makes drive such an appealing motivational construct. In theoretical terms, drive is an intervening variable, one that integrates the relationships among several otherwise diverse input and output variables (Miller, 1971). Drive is the unobservable

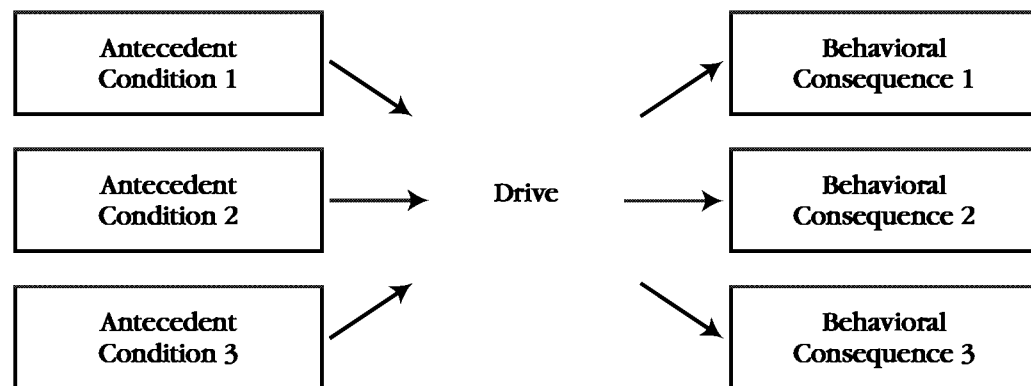


Figure 4.4 Drive as an Intervening Variable

motivational concept that stands between (that “intervenes” between) observable causes and observable behaviors.

Pain, as an intervening variable, for example, helps explain what is common among the motivational processes that occur immediately after, for instance, a hammer strikes the hand (Antecedent 1 in the figure), a hand touches a hot stove (Antecedent 2), or a bare foot scrapes across a nail (Antecedent 3) to the time that the person shakes his or her hand frantically (Consequence 1), pours cold water over his or her hand (Consequence 2), or hops around on one foot while holding the injured foot (Consequence 3). Drive, therefore, intervenes between states of deprivation (input stimuli) and restorative goal-directed actions (output responses).

Consider the rhetorical advantage of using drive as an intervening variable for connecting multiple inputs with multiple outputs.¹ Imagine that the three inputs in Figure 4.4 were hours of food deprivation, the tempting smell of fresh popcorn, and hanging out at a party with food on every table. Now imagine that the three outputs were amount of calories consumed, latency to begin eating, and probability of eating a meal versus skipping it. Smelling popcorn and attending a party do not cause behaviors like eating a lot of food (amount of calories consumed). We only sometimes eat a lot or eat quickly. Our motivated behavior depends on the intensity of our hunger (drive), not on the lure of popcorn or on the easy availability of the food. For this reason, motivation psychologists focus on the motivational properties of the intervening variable (drive), rather than on the potential motivational properties of hundreds of individual inputs to drive (hours of deprivation, smell of popcorn, plentiful food, and so on).

Intraorganismic Mechanisms

Intraorganismic mechanisms include all the biological regulatory systems within the person that act in concert to activate, maintain, and terminate the physiological needs that

¹The intervening variable approach depicted in Figure 4.4 applies to all motives, not just to drive. The inputs and outputs for the need for achievement, for instance, could be optimal challenge, rapid feedback, and personal responsibility for one’s outcomes (multiple inputs) and persistence in the face of failure, choice of moderately difficult undertakings, and entrepreneurship (multiple outputs).

underlie drive. Brain structures, the endocrine system, and bodily organs constitute the three main categories of intraorganismic mechanisms. For hunger, the principle intraorganismic mechanisms include the hypothalamus (brain structure), glucose and insulin hormones (endocrine system), and the stomach and liver (bodily organs). Together, these bodily mechanisms affect one another in ways that explain the physiological events that create, maintain, and terminate the psychological experience of drive. The study of intraorganismic mechanisms is the study of what role brain structures, hormones, and bodily organs play in the rise and fall of physiological needs

Extraorganismic Mechanisms

Extraorganismic mechanisms include all the environmental influences that play a part in activating, maintaining, and terminating psychological drive. The principle categories of extraorganismic mechanisms are cognitive, environmental, social, and cultural influences. For hunger, extraorganismic influences include beliefs about calories and goals for losing weight (cognitive influences), the smell of food and the time of day (environmental influences), the presence of others and peer pressure to eat or not to eat (social influences), and sex roles and cultural ideals about desirable and undesirable body shapes (cultural influences). The study of extraorganismic mechanisms is the study of what role cognitive, environmental, social, and cultural influences play in the rise and fall of physiological needs.

The Homeostatic Mechanism: The Wisdom of the Body

Figure 4.5 graphically represents the homeostatic mechanism, or the “wisdom of the body” to use the name of Walter Cannon’s (1932) book on the subject. Whether the homeostatic state in the body’s water level, glucose level, or nutrient storage level, intraorganismic mechanisms engage in an ongoing process of error detection in which rising internal conditions produce negative feedback and drive satiety or falling internal conditions produce physiological need, activated drive, and the behavioral activation (multiple outputs) necessary to restore the homeostatic level of that internal state. The purpose of Figure 4.5 is both to overview the homeostatic mechanism and also to illustrate the interrelationships between the seven core processes introduced over the last four pages that constitute the fundamentals of regulation—physiological need, psychological drive, homeostasis, negative feedback, multiple inputs/multiple outputs, intraorganismic mechanisms, and extraorganismic mechanisms.

THIRST

Our bodies are mostly water—about two-thirds. When our water volume falls by about 2%, we feel thirsty. Dehydration does not occur until the person loses 3% of water volume (Weinberg & Minaker, 1995). Thirst is the consciously experienced motivational state that readies the body to perform behaviors necessary to replenish a water deficit. It is the loss of water, below an optimal homeostatic level, that creates the physiological need that underlies thirst.

Thirst arises as a physiological need because our bodies continually lose water through perspiration, urination, breathing, and even through bleeding, vomiting, and

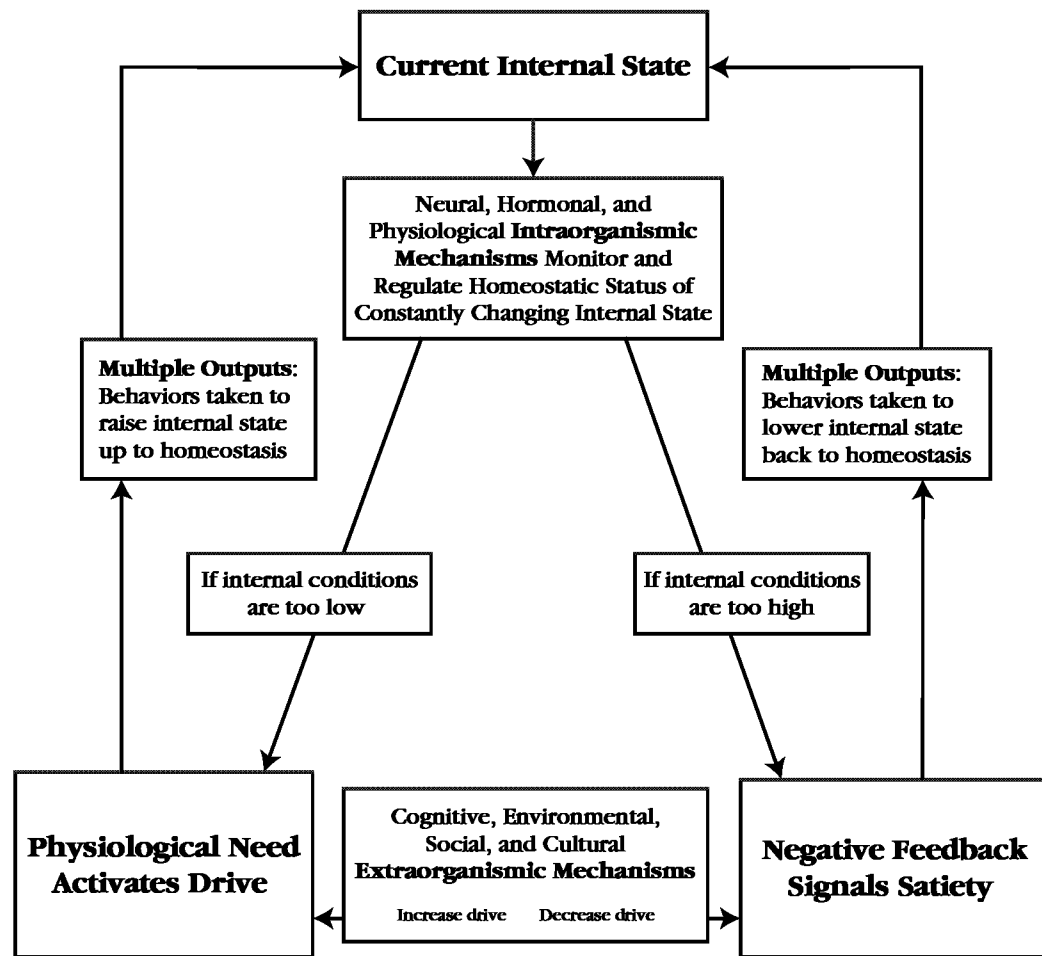


Figure 4.5 The Homeostatic Mechanism

sneezing (i.e., multiple inputs). Without water replenishment, each of us would die in about 2 days. If you have ever gone more than 24 hours without any water, then you know that the body has effective intraorganismic mechanisms to grab your attention—your full attention—and motivate goal-directed behaviors to find and consume water.

Physiological Regulation

The water inside the human body lies in both intracellular and extracellular fluids. The intracellular fluid consists of all the water inside the cells (approximately 40% of body weight). The extracellular fluid consists of all the water outside the cells in blood plasma and interstitial fluid (approximately 20% of body weight).

Water is water no matter where it is in the body, but the differentiation is important because thirst arises from these two distinct sources. Because thirst arises from both intracellular and extracellular deficits, physiologists endorse the “double-depletion model” of thirst activation (Epstein, 1973). When the intracellular fluid needs replenishment, *osmometric thirst* arises. Cellular dehydration causes osmometric thirst, and cellular

hydration stops it. When the extracellular fluid needs replenishment (e.g., after bleeding or vomiting), *volumetric thirst* arises. Hypovolemia (reduction of plasma volume) causes volumetric thirst, and hypervolemia stops it.

Thirst Activation

Consider the standard water deprivation study. Laboratory animals are deprived of water but not food for about 24 hours (Rolls, Wood, & Rolls, 1980). After depriving the animals of water, researchers selectively replace either the intracellular or the extracellular water (using special infusion techniques). The procedure yields three conditions: (1) 24-hour water deprivation followed by intracellular replenishment; (2) 24-hour water deprivation followed by extracellular replenishment; and (3) 24-hour water deprivation with no replenishment (a control group). The amount of water drunk by animals in the third (control) group serves as a standard of normal thirst (indexed by drinking). Rats that received full replenishment of their extracellular fluids drank just a bit less than did the rats that received no replenishment at all. That is, they drank as if they were still very thirsty. Rats that received replenishment of their intracellular fluid drank much less. That is, they drank as if they were mostly full. These results suggest that osmometric thirst is the primary cause of thirst activation. Thirst comes mostly from dehydrated cells.

Thirst Satiation

When people drink, they do not drink forever. Something alerts the body to quit drinking. The negative feedback system is important because the body must not only replenish its water deficits, but it must also prevent drinking so much water that cellular dysfunction occurs and threatens death. In this spirit, animals that are not water deprived do not want to drink, and if forced to do so, they just let the water dribble out the side of their mouths without swallowing it (Williams & Teitelbaum, 1956). Humans, of course, often binge when drinking, but such drinking is regulated by factors other than water, such as taste or alcohol.

During drinking, water passes from the mouth and esophagus to the stomach and intestines and is then absorbed into the bloodstream. Through the process of osmosis, water eventually passes from the extracellular fluids into the intracellular fluids to hydrate the cells. The negative feedback mechanism for this satiation must therefore lie in one (or more) of these bodily sites: mouth, stomach, intestines, bloodstream, and cells.

To locate thirst's negative feedback mechanism(s), physiologists devised a number of experiments. In one, animals drank water, but the experimenters arranged for the water to pass through the mouth but not reach the stomach (or intestines, bloodstream, or cells; Blass & Hall, 1976). The animals, on average, drank four times their normal amount of water, but they did eventually stop drinking. Thus, water passing through the mouth does provide one means of thirst inhibition, albeit a weak one. Later research identified that the mouth's specific stop system was related to the number of swallows during drinking (Mook & Wagner, 1989). After many swallows (but not necessarily after one drinks a large volume of water), drinking stops.

Subsequent studies arranged for animals to drink so that water passed from the mouth to the stomach but not into the intestines, bloodstream, or cells (Hall, 1973). Animals receiving water into their mouths and stomachs drank twice as much as normal. Thus, the

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stomach, like the mouth, also has a thirst inhibitory mechanism, albeit another weak one. Other studies allowed animals to drink with water passing through the mouth, stomach, and intestines, and into the extracellular fluids (Mook & Kozub, 1968). The water the rats drank, however, was a salt solution. Drinking the salt solution allowed much water into the extracellular fluids but little into the intracellular fluids. (Following the principle of osmosis, salty water does not diffuse into intracellular areas.) These animals drank more than normal. Therefore, the cells themselves must also house a negative feedback mechanism. Hence, water consumption does not fully alleviate thirst and stop drinking unless it eventually hydrates bodily cells (Mook, 1996). When taken as a whole, multiple negative feedback systems for thirst satiety exist—in the mouth, stomach, and cells.

Hypothalamus and Kidneys

The mouth, stomach, and cells coordinate thirst action and satiety, but so do the kidneys, hypothalamus, and specific hormones. The brain (through the hypothalamus) monitors intracellular shrinkage (caused by low-water levels) and releases a hormone into the blood plasma that sends a message to the kidneys to conserve its water reserves (by producing concentrated, rather than diluted, urine). The kidneys will also release water if the person is low on fluid. While the hypothalamus is managing the involuntary behavior of the kidneys, it also creates the conscious psychological state of feeling thirsty that directs attention and behavior toward water replenishing courses of action. It is in the hypothalamus that the psychological experience of thirst originates, enters into consciousness (by sending a message of awareness to the frontal lobes of the neocortex), and generates the motivational urge to drink.

Environmental Influences

The most important environmental influence for drinking is taste (Pfaffmann, 1960, 1961, 1982). Pure water is tasteless and, therefore, offers no incentive value above and beyond water replenishment. When water is given a taste, however, drinking behavior changes in accordance with the incentive value of the fluid. The incentive values for four tastes appear in Figure 4.6: sweet, sour, salty, and bitter, represented at various stimulus intensities. Using tasteless (pure) water as a baseline (no pleasantness), any taste is slightly pleasant at a very low intensity (even bitter to a small extent). At more substantial intensities, sucrose-flavored (sweet) water is markedly more pleasant than is tasteless water. Tartaric acid (sour), salt, and quinine-flavored (bitter) water are all markedly more unpleasant than tasteless water. So because flavored water has incentive value, people overdrink sweet water, homeostatically drink tasteless water, and underdrink sour, salt, and bitter water.²

When factors such as a sweet taste offer a high incentive value for drinking, human beings drink excessively and sometimes consume dangerously high amounts, biologically speaking (Rolls et al., 1980). People often drink soft drinks and tea for their taste alone.

²The relationship between taste and drinking behavior is complicated by the fact that water deprivation affects the perception of the taste of water. Water becomes increasingly more hedonically positive (more rewarding) with increased deprivation, and water becomes increasingly more hedonically aversive with water satiation (Beck, 1979; Williams & Teitelbaum, 1956).

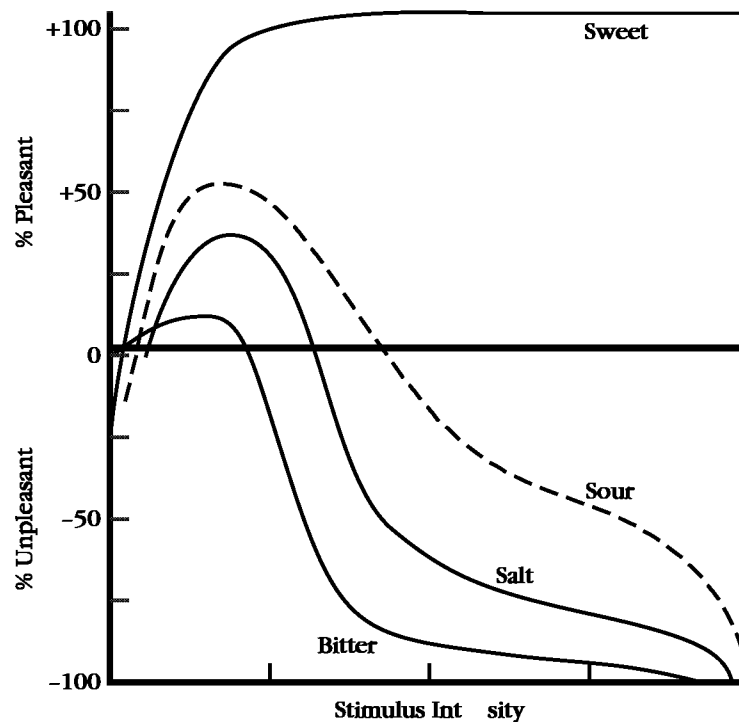


Figure 4.6 Relative Pleasantness of Four Taste Solutions

Source: From *The Pleasures of Sensation* by C. Pfaffmann, 1960, *Psychological Review*, 67, pp. 253–268. Copyright 1960 by the American Psychological Association. Reprinted with permission.

For water-based drinks that contain alcohol or caffeine, complications via addictions can emerge. Both alcohol and caffeine, therefore, introduce a number of additional physiological processes that motivate people to drink to excess. Furthermore, a number of social and cultural influences surround the drinking of alcoholic and caffeinated beverages that make drinking behavior more complex than thirst-regulated water consumption. Some students on college campuses, for instance, binge-drink alcohol in astonishingly large amounts. Some drugs (e.g., Ecstasy) can also make people feel intensely thirsty and drink well beyond their physiological need, even to the point of water intoxication and death (Valtin, 2002). Thus, drinking occurs for three reasons: (1) water replenishment, which satisfies physiological need; (2) sweet taste, which is a response to the attractive incentive value of flavored water; and (3) an attraction to, or even an addiction to, a substance in the water (and not the water itself).

The cultural prescription to drink eight glasses of water a day is another extraorganismic influence on drinking behavior. No scientific evidence, however, supports this advice (Valtin, 2002), largely because food intake provides 20% of total water intake while beverages of all kinds provide the rest (Rolls, Bell, & Thorwart, 1999). Water availability and drinking schedules are also extraorganismic influences on drinking behavior. Animals with water-plentiful environments drink less over the course of a day than do animals with water-restricted environments (Toates, 1979). Animals also acquire and closely adhere to drinking schedules, irrespective of their physiological need for water (Toates, 1979).

HUNGER

Hunger is more complex than thirst. Water loss instigates thirst, and water replenishment satiates it. Hunger, then, might simply involve the cyclical loss and replenishment of food. But hunger only loosely follows a “depletion–repletion” model. Food deprivation does activate hunger and eating (i.e., people eat three meals a day to prevent food deprivation). But hunger regulation involves both short-term daily processes operating under homeostatic regulation (e.g., depletion and repletion of blood glucose and calories) and long-term processes operating under metabolic regulation and stored energy (e.g., fat cells). Hunger and eating are further affected, and substantially so, by cognitive, social, and environmental influences, so much in fact that an understanding of hunger and eating requires (1) short-term physiological models, (2) long-term physiological models, and (3) cognitive–social–environmental models (Weingarten, 1985).

Two models occupy most of hunger researchers’ attention. The first is a short-term appetite model in which immediately available energy (blood glucose) is constantly monitored. This model is rooted within the glucostatic hypothesis, and it does a good job accounting for the onset and termination of hunger and eating. The second model is the long-term energy balance model in which stored energy (fat mass) is available and used as a resource to supplement glucose monitored energy regulation. This model is rooted within the lipostatic model, and it does a good job showing how fat stores contribute a second regulatory role over hunger and eating.

Short-Term Appetite

Short-term hunger cues regulate the initiation of meals, the size of meals, and the termination of meals. The glucostatic hypothesis argues that blood-sugar levels are critical to hunger—when blood glucose drops, people feel hungry and want to eat (Campfield, Smith, Rosenbaum & Hirsch, 1996; Mayer, 1952, 1953).

Cells require glucose to produce energy, so after a cell uses its glucose to carry out its functions a physiological need for glucose arises.³ The bodily organ that monitors level of blood glucose is the liver, and when blood glucose is low the liver sends an excitatory signal to the lateral hypothalamus (LH), the brain center responsible for generating the psychological experience of hunger (Anand, Chhina, & Singh, 1962; Wyrwicka, 1988). Stimulation of the LH is important, because its stimulation will lead animals to overeat and, if stimulation is continued, to obesity (Elmqvist, Elias, & Saper, 1999).

The brain structure involved in the termination of meals is the ventromedial hypothalamus (VMH). When stimulated, the VMH acts as the brain’s satiety center—that is, the VMH is short-term appetite’s negative feedback system (Miller, 1960). Without a VMH, animals become chronic overeaters that double their body weight (Stevenson, 1969). How the VMH gets stimulated in the first place is by the liver’s detection of high

³Blood glucose is not the full story in the onset of hunger, as people with diabetes will tell you because they often have both high glucose and high hunger. While people with diabetes have high blood glucose, what they need (and do not have) is high cellular glucose. People with diabetes need insulin because insulin (the hormone they lack) increases cell membrane permeability so that glucose can flow freely from the bloodstream into the cells (Schwartz, Woods, Porte, Seeley, & Baskin, 2000). In the presence of insulin, blood glucose can then become cellular glucose.

levels of glucose (Russek, 1971; Schmitt, 1973), stomach distensions (bloated stomach) during eating (Moran, 2000), and the release of the gut peptide cholecystokinin (CCK; Woods, Seeley, Porte, & Schwartz, 1998).

According to the glucostatic hypothesis, appetite rises and falls in response to changes in plasma glucose that, when low, stimulate the LH to increase hunger and that, when high, stimulate the VMH to decrease hunger. Other intraorganismic mechanisms also regulate the rise and fall of hunger. The LH, for instance, contains specialized neurons that respond to the sight and taste of food, and these specialized neurons become activated only when the animal is already somewhat hungry (Rolls et al., 1979). Hormones also stimulate the LH and VMH, as discussed in the opening vignette to Chapter 3 in which plasma ghrelin stimulates the LH (and hunger) while plasma leptin stimulates the VMH (and satiety). Leptin, for instance, is the hormone secreted into the blood by fat cells to produce satiety (Campfield, Smith, & Burn, 1997a, 1997b; Spiegelman & Flier, 2001). The LH also manufactures appetite-boosting peptide called orexins (which is the Greek word for “appetite”; Sakurai et al., 1998). Orexins are powerful appetite boosters, and when injected into the brain of rats, the animals will eat three to six times more than control rats.

Findings such as these with ghrelin and orexins are very exciting to drug researchers trying to find ways to stimulate appetite in humans, such as people going through chemotherapy (Woods et al., 1998). Findings such as these with leptin are even more exciting to drug researchers as they try to find ways to suppress appetite in humans, thus reversing obesity (Campfield, Smith, & Burn, 1998). Unfortunately, leptin administration experiments have not acted to decrease hunger and reverse obesity because animals develop resistance to leptin and therefore continue to experience both hunger and obesity even after leptin administration (Myers, Cowley, & Munzberg, 2008). One currently popular strategy is to rank carbohydrates in terms of how much they raise blood-sugar level (the so-called “glycemic index”). To postpone the release of hunger-causing insulin, some food companies now offer low glycemic index foods while others offer nutrition bars with a special type of starch to keep blood sugar level constant (to suppress the onset of hunger).

Appetite also rises and falls in response to nonbrain-based cues. These peripheral bodily cues include the mouth (Cabanac & Duclaux, 1970), stomach distensions (Deutsch, Young, & Kalogeris, 1978; McHugh & Moran, 1985), and body temperature (Brobeck, 1960) (Because cold temperatures stimulate hunger, restaurateurs routinely run their air conditioners on full blast.) The chief nonbrain-based regulator of hunger is the stomach. It empties itself at a calorie-constant rate (about 210 calories per hour), so appetite returns more quickly after a low-calorie meal than after a high-calorie meal (McHugh & Moran, 1985). With a full stomach, people report no hunger; with a stomach that is 60% empty, people report a hint of hunger; and with a stomach that is 90% empty, people report maximum hunger, even though some food remains in the stomach (Sepple & Read, 1989).⁴

⁴Deutsch and Gonzalez (1980) further find that the stomach signals not only food volume information but food content information as well. These researchers removed specific nutrients from an animal's food and found that the animal responded by eating foods that had those particular nutrients and refusing foods without those nutrients.

Long-Term Energy Balance

Like glucose, fat (adipose tissue) also produces energy. Just as the body monitors its glucose levels rather precisely, it also monitors its fat cells rather precisely (Faust, Johnson, & Hirsch, 1977a, 1977b). According to the lipostatic (lipo = fatty; static = equilibrium) hypothesis, when the mass of fat stored drops below its homeostatic balance, adipose tissue secretes hormones (e.g., ghrelin) into the bloodstream to promote weight gain motivation that increases food intake (Borecki, Rice, Peirusse, Bouchard, & Rao, 1995; Cummings et al., 2002; Wren et al., 2001). Alternatively, when the mass of fat stored increases above its homeostatic balance, adipose tissue secretes hormones (e.g., leptin) into the bloodstream to reduce food intake and promote weight loss motivation (Harvey & Ashford, 2003; Schwartz & Seeley, 1997). Because fat stores are relatively stable and enduring sources of energy, the lipostatic hypothesis illustrates the body's neurohormonal system for smoothing out the otherwise short-term fluctuations in energy balance from blood glucose levels.

A spin-off of the lipostatic hypothesis is the set-point theory (Keesey, 1980; Keesey, Boyle, Kemnitz, & Mitchell, 1976; Keesey & Powley, 1975; Powley & Keesey, 1970). Set-point theory argues that each individual has a biologically determined body weight or "fat thermostat" that is set by genetics either at birth or shortly thereafter. Genetics create individual differences in the number of fat cells per person. In set-point theory, hunger activation and satiety depend on the size (not the number) of one's fat cells, which vary over time. When fat cell size is reduced (e.g., through dieting), hunger arises and persists until feeding behavior allows the fat cells to return to their natural (set-point) size. Hunger therefore is the body's means of defending its genetic set point (Bennett, 1995).

The lipostatic hypothesis reflects long-term enduring factors (e.g., genetics, metabolic rates) that regulate the balance between food intake, energy expenditure, and body weight. As to genetics, people inherit relatively consistent metabolic rates (biochemical processes that convert stored energy into expendable energy). People also inherit a number of fat cells and a homeostatic set-point for how extended (full) those fat cells should be. While these regulatory processes are relatively constant over time, they can and do change. Set point rises with age, metabolism drops following prolonged caloric restriction (as during a diet), and a chronic excess of food intake can lead to an increase in both fat cell size (lipogenesis) and fat cell number (adipogenesis) (Kassirer & Angell, 1998; Keesey, 1989; Mandrup & Lane, 1997).

Comprehensive Model of Hunger Regulation

A comprehensive model that combines short-term and long-term influences on appetite appears in Figure 4.7. The two solid horizontal lines connecting hunger to eating represent the glucostatic hypothesis of short-term appetite in which hunger motivates eating (denoted by the + sign) while eating satiates hunger (denoted by the – sign). The dashed lines represent the lipostatic hypothesis of long-term appetite in which eating increases fat stores while fat stores (when too low) stimulate hunger and fat stores (when too high) stimulate satiety. In addition, physical activity decreases fat stores, environmental influences stimulate eating, and self-regulatory motivation (e.g., goal setting, monitoring

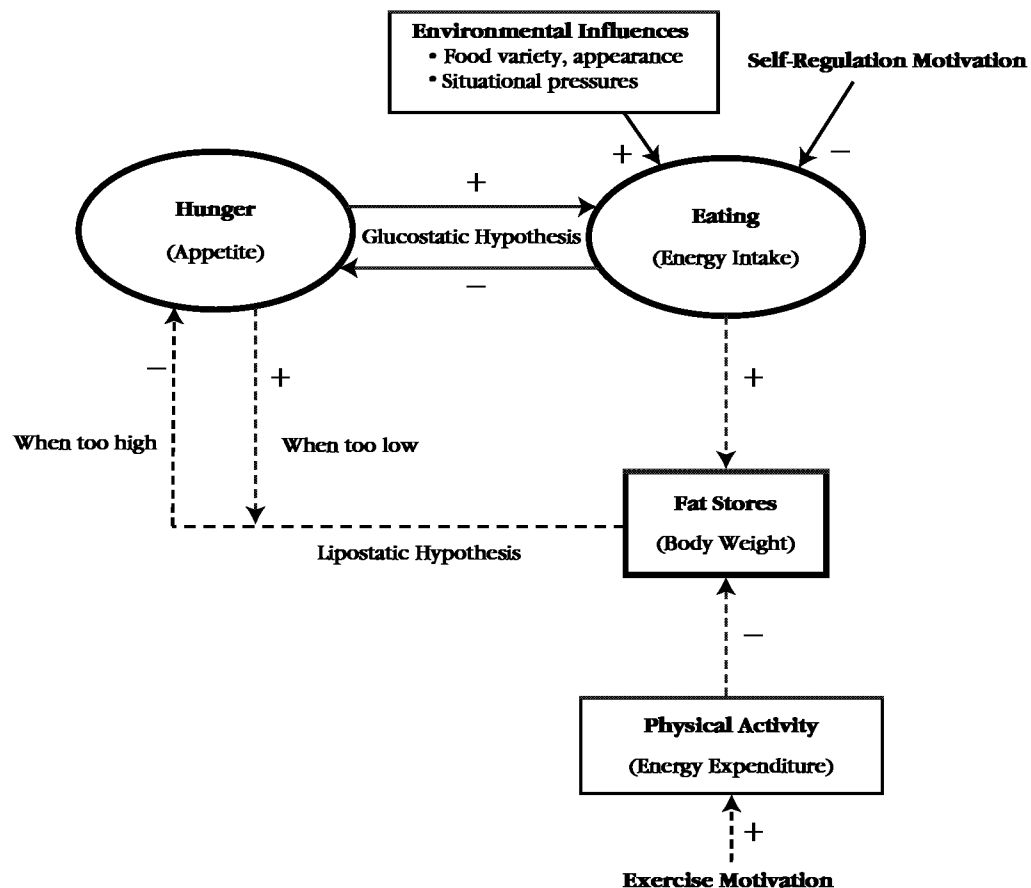


Figure 4.7 Comprehensive Model of Hunger Regulation

one's weight) inhibit eating. Overall, the figure identifies the core processes underlying hunger and eating from what can otherwise be a very complex set of relationships.

Environmental Influences

Environmental influences that affect eating behavior include the time of day, stress, and the sight, smell, appearance, and taste of food. Eating behavior increases significantly, for instance, when an individual confronts a variety of foods, a variety of nutrients, and a variety of tastes (Rolls, 1979; Rolls, Rowe, & Rolls, 1982). The mere availability of food variety encourages more eating than does a monotonous diet (Sclafani & Springer, 1976). Even when the individual has only one type of food (e.g., ice cream), variety in the number of flavors available increases food intake (Beatty, 1982). Food availability (e.g., a lot of different foods sitting out on a table at a party) and large portion sizes also lead people to overeat (Hill & Peters, 1998). For food availability, for instance, people nibble here and there when a lot of different foods are sitting out on a table at a party. Each new food brings a new taste, and hence can initiate eating in a way that is independent of hunger. For large portion sizes, people generally eat more when the meal is "super-sized" than when it is not.

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Eating is often a social occasion. People eat more when they are in the presence of others (who are also eating) than when they are alone—often 50% more (Berry, Beatty, & Klesges, 1985; De Castro, 1991, 1994; De Castro & Brewer, 1992). In the company of others, people eat more and they eat for longer periods of time (De Castro, 1990), and this is especially true when those others are family and friends (De Castro, 1994). Furthermore, it is the sheer number of other people eating that predicts the social facilitation of food intake (De Castro & Brewer, 1992). People who are trying to diet are also more likely to relapse when they are in the presence of others who are eating (Grilo, Shiffman, & Wing, 1989). One demonstration of this social facilitation effect involved an experiment with the help of college students participating in an ice-cream tasting experiment. Half the students ate alone, whereas the other half ate in a group of three. Ice-cream eaters also had either one or three flavors from which to choose (a variety manipulation). Table 4.1 lays out the results: Males and females ate more in both the presence of others and in the presence of variety.

Situational pressure to eat or to diet serves as another environmental influence on eating behavior. Bingeing on food, for instance, is an acquired behavioral pattern under substantial social control (Crandall, 1988). It often occurs in small groups, such as athletic teams (Crago, Yates, Beutler, & Arizmendi, 1985) and cheerleading squads (Squire, 1983), partly because small groups develop and enforce norms about what is appropriate behavior. Deviation from these norms typically results in some form of interpersonal rejection and a reduction in popularity. If eating is an important behavior for the group, then group pressure can become an even more potent eating signal than one's physiology. Another influence on eating is whether our friends are obese. A person's chance of becoming obese increases by over 50% if he or she has a friend who recently became obese, and this is especially true with siblings and same-sex friends. Also eating is an important behavior in the lives of children, and children prefer the same foods eaten by those they admire (Birch & Fisher, 1996).

Restraint-Release Situations

Much in the same way that social pressures can interfere with and override physiological regulation, dieting and fasting too can interfere with physiological guides. By dieting, the

Table 4.1 Ice-Cream Intake (in Grams) for Students Alone versus in Group and with One versus Three Flavors

	Social Setting			
	Alone		Three-Person Group	
	Number of Flavors		Number of Flavors	
	1	3	1	3
Males	113.8	211.1	245.6	215.6
Females	76.9	137.7	128.5	170.8

Source: From *Sensory and Social Influences on Ice Cream Consumption by Males and Females in a Laboratory Setting*, by S. L. Berry, W. W. Beatty, and R. C. Klesges, 1985, *Appetite*, 6, pp. 41–45.

dieter attempts to bring eating behavior under cognitive, rather than under physiological, control (e.g., “I will eat this much at this time,” rather than “I will eat when hungry”). More often than not, however, dieting paradoxically causes subsequent bingeing. The dieter becomes increasingly susceptible to disinhibition (or “restraint release”), especially under conditions of anxiety, stress, alcohol, depression, or exposure to high-calorie foods (Greeno & Wing, 1994; Polivy & Herman, 1983, 1985). One study, for example, found that people on a diet ate less ice cream than people not dieting, as you would expect, but dieters actually ate more than nondieters when everyone first drank a 15-ounce milkshake. After the dieters drank the high-calorie food, they became increasingly vulnerable to bingeing (Herman, Polivy, & Esses, 1987), a phenomenon known as restraint release and a pattern of bingeing described as counterregulation (Polivy & Herman, 1985). For dieters, there is truth in the advertising slogan, “You can’t eat just one.” Similarly, fasting rarely works because it is associated with a major reduction in energy expended, decreased metabolism, and fragile cognitive controls that are vulnerable to restraint release (Lowe, 1993).

Counterregulation describes the paradoxical pattern displayed by dieters who eat very little when just nibbling but who eat very much after consuming a large, high-calorie “preload” (Herman & Mack, 1975; Polivy 1976; Ruderman & Wilson, 1979; Spencer & Fremouw, 1979; Woody, Costanzo, Leifer, & Conger, 1981). But consuming high-calorie food is only one of many conditions that unleash dieters’ bingeing. Depression can also trigger a dieter’s restraint release. For instance, depressed dieters typically gain weight, whereas people who are not dieting and are depressed typically lose weight (Polivy & Herman, 1976a). The same pattern holds for anxiety as anxious dieters eat more than anxious people who are not dieting (Baucom & Aiken, 1981). Conditions that threaten one’s ego (e.g., failure at an easy task, making a speech before an evaluative audience) produce the same paradoxical effect in which restrained eaters eat more than do unrestrained eaters (Heatherton, Herman, & Polivy, 1991). Alcohol has this same restraint-release effect on dieters as well (Polivy & Herman, 1976b). Taken as a whole, research on social facilitation, social pressure, and restraint-release documents that eating behavior can and often does move away from physiological regulation and toward some type of counterproductive nonphysiological regulation, such as social, cognitive, or emotional regulation (Polivy & Herman, 1985).

Cognitively Regulated Eating Style

As illustrated by the glucostatic and lipostatic hypotheses, the body defends its weight. Sometimes, however, people come to the conclusion that their physiologically regulated body weight does not measure up well to their personal or cultural aspirations. Rather like a civil war, people decide that it is time for the mind, or will, to begin the revolution to take over and regulate body weight. The revolt begins as cognitive controls try to supplant, or override, physiological controls. Successful dieting (in terms of weight-loss goals) requires that the dieter first deaden his or her responsiveness to internal cues (e.g., feeling hungry or full) and second substitute conscious cognitive controls for unconscious physiological ones (Heatherton, Polivy, & Herman, 1989). The big problem, however, is that cognitive controls do not feature a negative feedback system. Dieters are therefore highly vulnerable to bingeing when situational events interfere with cognitive inhibitions (e.g., the presence of others, depression, anxiety, alcohol, intake of high-calorie preloads).

Weight Gain and Obesity

Obesity is a medical term that describes a state of increased body weight (adipose tissue) that is of sufficient magnitude to produce adverse health consequences, including an increased risk of heart disease, diabetes, respiratory problems, some cancers, and premature death (Stevens et al., 1998). A whopping 65% of American adults are overweight, with 35% of all adults qualifying as obese or as morbidly obese (Yanovsky & Yanovsky, 2002). Unfortunately, little or no research supports the claim that weight loss produces health benefits (Blackburn, 1995), as the cure for obesity (i.e., weight loss) might very well be worse than the condition (Kassirer & Angell, 1998). Therefore, instead of concentrating on encouraging weight loss, most obesity researchers emphasize prevention (adults in their 20s and 30s often gain a lot of weight) and the cultivation of a healthier lifestyle that centers on exercise (see Box 4) and healthy eating (Otis & Pelletier, 2008).

Other than surgery (see Cummings et al. 2001), the only ways people can prevent or reverse weight gain and obesity are to decrease eating through self-regulatory strategies (e.g., goals, monitoring one's behavior), becoming aware of and monitoring the environmental influences that affect eating, and increasing physical activity to expend calories and fat stores (see Figure 4.7; Box 4). These three motivations—self-regulation of food intake, mindfulness over one's environmental influences, and exercise motivation—are important to mention here because they represent voluntary behaviors rather than physiological regulatory processes. Physiological regulatory processes (as described above) affect hunger motivation, and hunger motivation is notoriously difficult to gain conscious control over (see the section “Restraint Release”). The optimistic point to make is that voluntary behaviors such as self-regulation, mindfulness, and exercising are not so difficult to gain conscious control over. So motivating oneself to regulate body weight can be effective to the extent that the person focuses his or her motivation on energizing and directing voluntary behaviors such as self-regulation, mindfulness, and exercising.

Set Point or Settling Points?

This chapter and the last 50 years of research on physiological needs are based on the concept of homeostatic set-point signals for drive and satiety. Robert Bolles (1980), however, argued against this traditional idea and for the idea of “settling points.” By analogy, physiological motivations rise and fall more like sea level does or more like stock prices on the New York Stock Exchange. As to the sea level analogy, no one monitors an optimal sea level (or stock price) and pours water into the ocean when sea level falls or takes water out of the ocean when sea level rises. Instead, forces such as evaporation and rainfall give the sea a forever changing “settling level” (and forces such as supply and demand give stock prices a forever changing “settling level”).

If homeostatic set points do not govern physiological needs, then what determines such consumatory behavior (i.e., motivated action)? The argument for settling level (over set point) is based on the overwhelming importance of extraorganismic influences on physiological appetites, influences that send both positive signals that stimulate (advertisements, attractiveness of stimuli) and negative signals that restrain (cultural norms,

BOX 4



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social inhibitions) consummatory behavior. Bolles (1980) argued that behaviors associated with drinking, eating, and mating arrive at a settling point regulated by prevailing cognitive, emotional, social, and cultural conditions. The expanding waistlines of Americans (and their pets!) seems like supportive antidotal evidence. Another supportive antidotal evidence is to ask the simple question as to why one eats (or drinks or mates): Is it because of an aversive internal drive to quiet hunger, or is it because of exposure to seductive outer incentives whispering “more, more, more.”

The current thinking is that consummatory behaviors such as drinking, eating, and mating have been narrowly confined to an exclusive study of set points and deficit signals (Berridge, 2004). This question of set points versus settling points promises to be an important question for behavioral neuroscientists and motivation researchers alike.

SEX

In lower animals, sexual motivation and behavior occur only during the female’s ovulation period (Parkes & Bruce, 1961). During ovulation, the female secretes a pheromone and its scent stimulates sexual advances from the male. For the male, injections of testosterone (a hormone) can further increase his sexual behavior. Hence, in the lower animals, sex conforms to the cyclical physiological need → psychological drive process shown in Figure 4.3: Time passes, biological need emerges and stimulates psychological drive, and its ensuing consummatory behavior satiates both the psychological drive and the physiological need.

Physiological Regulation

Human sexual behavior is influenced, but not determined, by hormones. The sex hormones are the androgens (e.g., testosterone) and estrogens, and their release into the bloodstream (from the adrenal gland) is controlled by the hypothalamus. These hormones rise at times like a woman’s ovulation period and fall as the person ages past young adulthood into adulthood and old age (Guay, 2001). At age 40, for instance, men’s testosterone levels decline by about 1% each year. In both men and women, sexual desire and the hormones that underlie it decline steadily beginning in the mid-20s (Laumann, Paik, & Rosen, 1999) such that the hormones and sexual desire of a 40-year-old are about half of that of a 20-year-old (Zumoff, Strain, Miller, & Rosner, 1995). Though present in both sexes, androgens contribute to the sexual motivation of males, and estrogens contribute to the sexual motivation of females (Money, Wiedeking, Walker, & Gain, 1976). Even for females, however, androgens play the key role in regulating sexual motivation, with decreases in testosterone (as with aging) foreshadowing decreased sexual desire and increases in testosterone (as with androgen replacement therapy) reviving sexual desire (Apperloo, van der Stege, Hoek, & Schultz, 2003; Davis, 2000; Guay, 2001; Munarriz et al., 2002; Tuiten et al., 2000).

Men and women experience and react to sexual desire very differently (Basson, 2001). In men, the correlation between physiological arousal and psychological desire is high. For instance, the correlation between men’s erectile response and their self-reported desire is very high (Meston, 2000). So men’s sexual desire can be predicted

and explained in the context of their sexual arousal. In the presence of a sexual arousal trigger (e.g., stimulation from a sexual partner), men show a triphasic sexual response cycle: desire, arousal, orgasm (Masters & Johnson, 1966; Segraves, 2001). The triphasic sexual response cycle that describes men's sexual motivation so well—the traditional sex response cycle—appears in the upper half of Figure 4.8. In this model, sexual desire emerges rather spontaneously from an arousal trigger (given appropriate basal support from hormonal levels), and that rising sexual desire then generates accompanying physiological and psychological arousal (in the form of sexual thoughts, fantasies, and a consciously felt urge to be sexual). Such sexual arousal enables orgasm, and with orgasm the traditional response cycle ends with a relatively quick resolution period that returns the person to a baseline state.

In women, the correlation between physiological arousal and psychological desire is low. For instance, the correlation between women's vaginal lubrication and their self-reported desire is low to nonexistent (Meston 2000). So women's sexual desire cannot be predicted and explained in the context of their physiological need (e.g., estrogen, testosterone) or arousal (e.g., genital engorgement). Instead, women's sexual desire is highly responsive to relationship factors, such as emotional intimacy (Basson, 2001, 2002). The intimacy-based model of sexual desire that describes women's sexual motivation so well appears in the lower half of Figure 4.8. In this alternative model, high emotional intimacy anticipates sexual desire. It is emotional intimacy (not genital engorgement) that takes women from a state of sexual neutrality to a state of being open and responsive to sexual stimuli. In this context, sexual motivation and behavior reflect closeness and a desire to share with one's partner more than it does an underlying physiological need (Basson, 2003). In this alternative model, sex begins with intimacy needs (not with sexual desire). Furthermore, sexual desire leads to and enhances long-term relationship intimacy (rather than to resolution, as in the traditional sex response cycle).

Facial Metrics

Many stimuli arise from a sexual partner—chemical (smell), tactile (touch), auditory (voice), and visual (sight, appearance). The physical attractiveness of a potential partner is perhaps the most potent external stimulus that affects sexual motivation. Western cultures generally rate a slim body build for women as attractive (Singh, 1993a, 1993b). But such standards vary from one culture to the next, largely because these standards are acquired through experience, socialization, and cultural consensus (Mahoney, 1983). That said, some physical characteristics are viewed as universally attractive, including health (e.g., clear skin; Symons, 1992), youthfulness (Cunningham, 1986), and reproductive capacity (Singh, 1993a).

Both men and women rate slim females as attractive. Women's perceptions of male attractiveness, however, have little consensus as to what body shapes or body parts are seen as attractive (Beck, Ward-Hull, & McLear, 1976; Horvath, 1979, 1981; Lavrakas, 1975). The main predictor of women's rating of men's bodies is waist-to-hip ratio (WHR), a measure that ranges typically from 0.7 to 1.0; it is calculated via the narrowest circumference of the waist divided by the widest circumference of the hips/buttocks). Women rate moderately slim WHRs in males as most attractive (Singh, 1995).

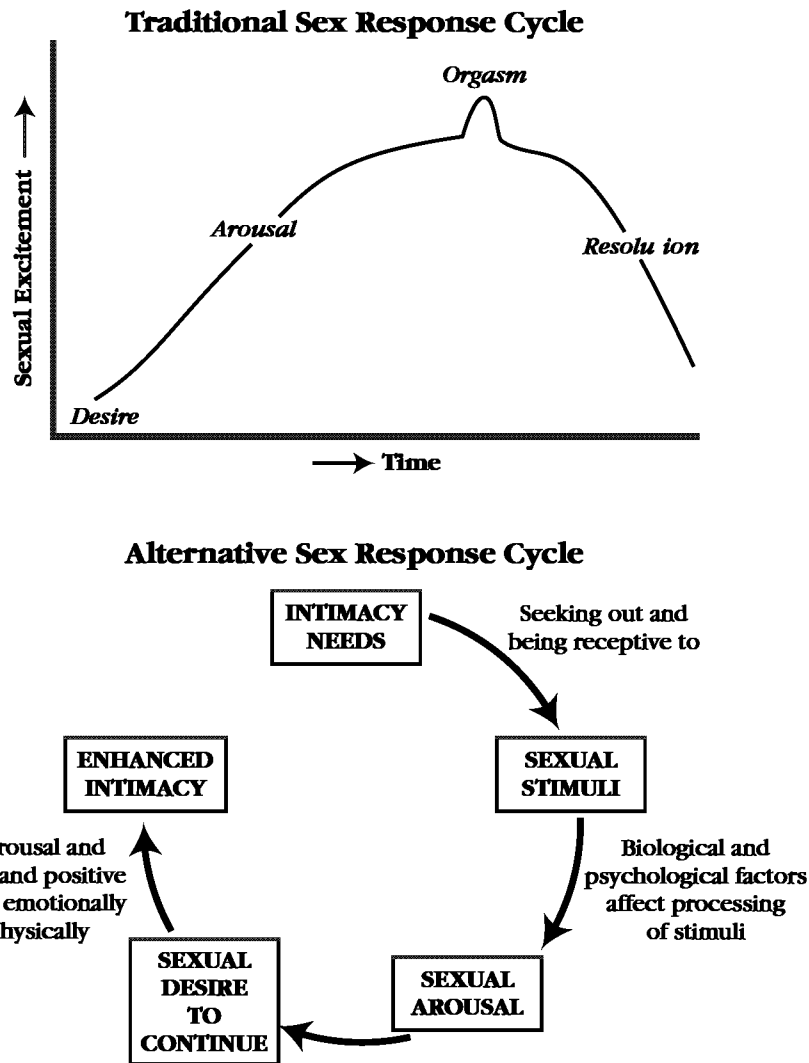


Figure 4.8 Two Models of the Sex Response Cycle: Traditional (Upper) and Alternative (Lower)

Source: From *Using a Different Model for Female Sexual Response to Address Women's Problematic Low Sexual Desire*, by R. Basson, 2001, *Journal of Sex and Marital Therapy*, 27, 395–403.

The study of people's judgments of the attractiveness of facial characteristics is called *facial metrics* (Cunningham, 1986; Cunningham, Barbee, & Pike, 1990; Cunningham, Roberts, Barbee, Druen, & Wu, 1995). Consider the face—and its facial metric parameters—shown in Figure 4.9. The questions that link facial metrics with the study of sexual motivation are, “On what dimensions do faces vary from each other, and which of those dimensions determine which faces are attractive?” Interestingly, different cultures show an impressive convergence in terms of which facial characteristics are considered attractive and which are not.

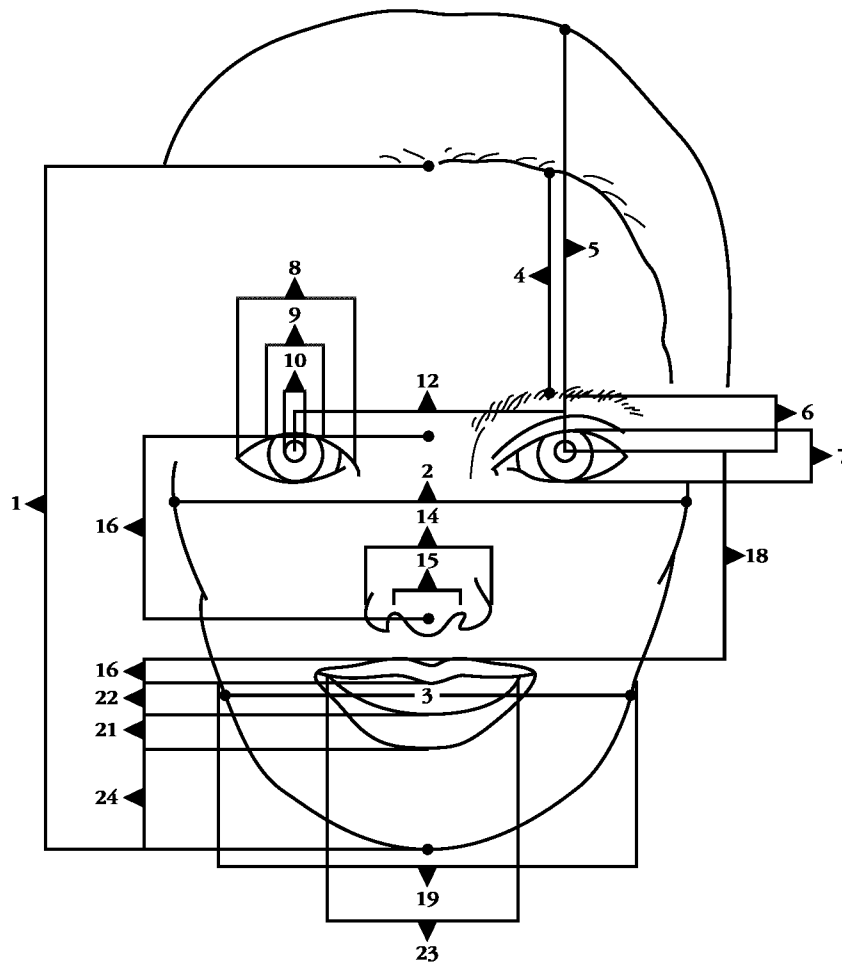


Figure 4.9 Male and Female Facial-Metric Parameters

1, Length of face, distance from hairline to base of chin; 2, Width of face at cheekbones, distance between outer edges of cheekbones at most prominent point; 3, Width of face at mouth, distance between outer edges of cheeks at the level of the middle of the smile; 4, Height of forehead, distance from eyebrow to hairline; 5, Height of upper head, measured from pupil center to top of head estimated without hair; 6, Height of eyebrows, measured from pupil center to lower edge of eyebrow; 7, Height of eyes, distance from upper to lower edge of visible eye within eyelids at pupil center; 8, Width of eyes, inner corner to outer corner of eye; 9, Width of iris, measured diameter of eye; 10, Width of pupil, measured diameter of center of eye; 11, Standardized width of pupil, calculated as a ratio of the width of the pupil to the width of the iris (not shown); 12, Separation of eyes, distance between pupil centers; 13, Cheekbone width, an assessment of relative cheekbone prominence calculated as difference between the width of the face at the cheekbones and the width of the face at the mouth length of the face (not shown); 14, Nostril width, width of nose at outer edges of nostrils at widest point; 15, Nose tip width, width of protrusion at tip of nose, usually associated with crease from nostril; 16, Length of nose, measured from forehead bridge at level of upper edge of visible eye to nose tip; 17, Nose area, calculated as the product of the length of nose and width of nose at the tip length of the face (not shown); 18, Mid-face length, distance from pupil center to upper edge of upper lip, calculated by subtracting from the length of face the height of forehead, height of eyebrows, width of upper lip, height of smile, width of lower lip, and length of chin; 19, Width of cheeks, calculated as an assessment of facial roundness based on the measured width of face at mouth; 20, Thickness of upper lip, measured vertically at center; 21, Thickness of lower lip, measured vertically at center; 22, Height of smile, vertical distance between lips at center of smile; 23, Width of smile, distance between mouth inner corners; 24, Length of chin, distance from lower edge of lower lip to base of chin.

Source: From *Measuring the Physical in Physical Attractiveness: Quasi-Experiments on the Sociobiology of Female Facial Beauty*, by M. R. Cunningham, 1986, *Journal of Personality and Social Psychology*, 50, pp. 925–935. Copyright 1986 by the American Psychological Association. Reprinted with permission.

Faces vary considerably, and Figure 4.9 illustrates 24 different structural characteristics (e.g., eye size, mouth width, cheekbone prominence). Three categories explain which faces are judged attractive: neonatal features, sexual maturity features, and expressive features. Neonatal features correspond to those associated with the newborn infant, such as large eyes and a small nose, and are associated with attractive nonverbal messages of youth and agreeableness (Berry & McArthur, 1985, 1986). Sexual maturity features correspond to those associated with postpubescent status, such as prominent cheekbones and, for males, thick facial and eyebrow hair, and are associated with attractive nonverbal messages of strength, status, and competency (Keating, Mazur, & Segall, 1981). Expressive features such as a wide smile/mouth and higher-set eyebrows are means to express positive emotions such as happiness and openness (McGinley, McGinley, & Nicholas, 1978).

Thus, a look at a person's facial features cues up a perception of that person's youthfulness/agreeableness, strength/status, and happiness/openness. It is within these perceptions, which are based on implicit facial metric ratings, that a person makes a judgment of how attractive that person's face is. This conclusion raises an interesting slant on the question of whether or not beauty is in the eye of the beholder. In one sense it is not, because facial metric ratings are objective features of faces that yield pan-cultural consensus as to which faces are beautiful. In another sense, however, it is, because a face is beautiful to the extent that the perceiver sees (and subjectively values) youthfulness, status, or happiness-openness. It is youthfulness, status, and happiness-openness that are beautiful, and faces just happen to be a conduit to communicate that information about the person.

Facial metrics research proceeds by showing dozens of different faces of men and women (via a PowerPoint presentation) to a group of opposite-sex heterosexual individuals (or same-sex homosexual individuals; Donovan, Hill, & Jankowiak, 1989). The individuals judge each face on a variety of dimensions (e.g., how attractive? how desirous as a sexual partner?) and the experimenters painstakingly measure each face on all the facial-metric dimensions listed in Figure 4.9. With these data in hand, the researchers investigate the correlations that emerge between attractiveness ratings and the various facial characteristics. To get a more personal feel for such an experiment, look at the seven different faces in Figure 4.10, and you will probably perceive in milliseconds that some of the faces are more attractive than are other faces. Given such different attractiveness perceptions, the question is, Why? Why is one face in Figure 4.10 more attractive than another? Answering this "why?" question requires breaking down each face by the 24 facial metrics introduced in Figure 4.9.

Facial metrics predict attractiveness ratings for the faces of women (Cunningham, 1986), men (Cunningham et al., 1990), different cultures (Cunningham et al., 1995), and different ages (Symons, 1992). For women's faces, the facial metrics most associated with physical attractiveness are the neonatal features (large eyes, small nose, small chin). Sexual maturity (cheekbone prominence and thinness) and expressive characteristics (eyebrow height and smile height and width) also add positively to attractiveness ratings of women's faces. For men's faces, the facial metrics most associated with physical attractiveness are the sexual maturity features (thick eyebrows and prominent chin length). Expressive features (smile height and width) also add to attractiveness ratings of men's faces.

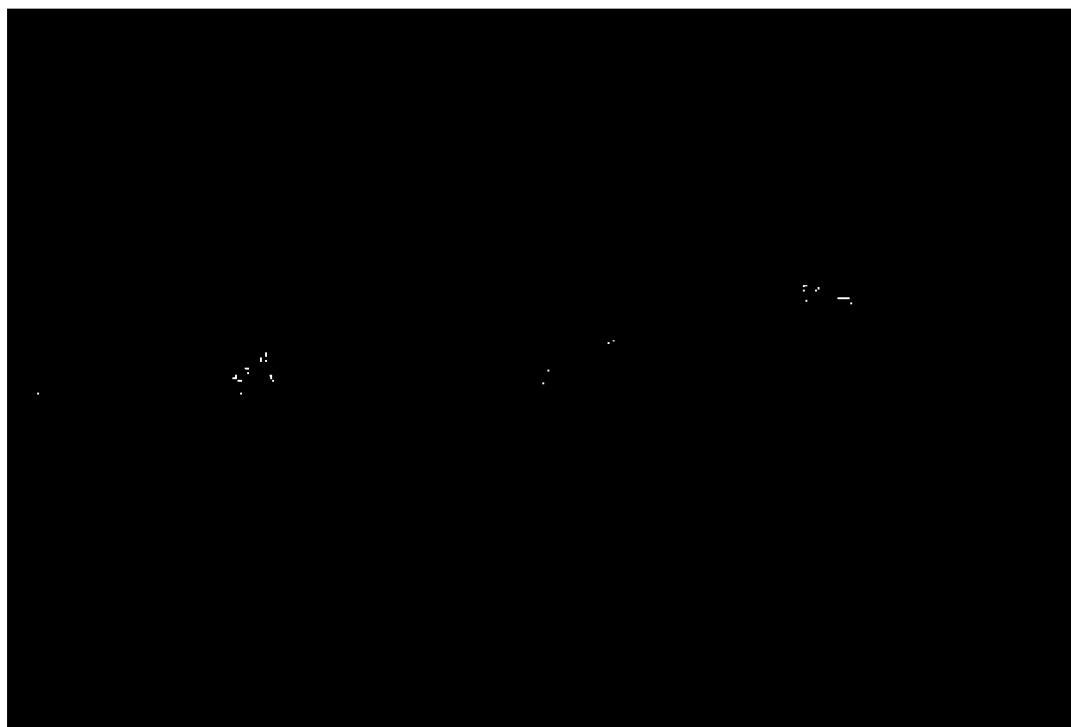


Figure 4.10 Seven Faces that Vary in Their Facial Metrics (and Hence in Their Attractiveness)

Sexual Scripts

A sexual script is one's mental representation of the step-by-step sequence of events that occur during a typical sexual episode (Gagnon, 1974, 1977; Simon & Gagnon, 1986). A sexual script, not unlike a movie script, includes specific actors, motives and feelings of those actors, and a set of appropriate verbal and nonverbal behaviors that should successfully conclude with sexual behavior. In its essence, the sexual script is the individual's s oryline of what a typical sexual encounter involves. The young male learns to coordinate his sexual script to coincide with the three linear stages in the sex response cycle of desire (excitement), arousal, and orgasm (see Traditional Sex Response Cycle in Figure 4.8). The pairing of a sexual (cognitive) script with the desire–arousal–orgasm cycle is helped along by masturbatory fantasies.

For females the coordination of sexual script and physical activity is looser, partly because fewer females masturbate in early adolescence but mostly because women's sexual arousal is steeped more in relationship factors than it is in physical activity. Furthermore, for females, the content of emerging sexual scripts contains little material that is sexual (from the male point of view). The sexual content of the female is more likely to include events such as falling in love (rather than participating in sex).

With dating, both the male and female sexual scripts gain the opportunity of transitioning themselves from independent, fantasy-based scripts to an interpersonal, team-like script. When the couple fails to coordinate their sexual scripts, their sexual episodes will likely be fraught with distress, conflict, and anxiety, and sexual performance is awkward

and unsuccessful. But when workable sequences of sexual behavior become coordinated and conventionalized and focused as much on the other as on oneself, the couple's sexual scripts begin to have an adaptive, additive, and reeducative character that brings sexual and relational satisfaction (Simon & Gagnon, 1986).

In addition to harboring sexual scripts to guide their sexual episodes, people also harbor sexual schemas, or cognitive representations of their sexual selves (Anderson & Cyranowski, 1994). Sexual schemas are beliefs about the sexual self that are derived from past experiences that feature both positive approach-oriented thoughts and behaviors as well as negative avoidance-oriented thoughts and behaviors. Hence, a person's sexual self includes an inclination to experience sexual desire and sexual participation (positive approach aspects) and also an inclination to experience anxiety, fear, conservatism, and sexual inhibition (negative avoidance aspects). Positive elements of sexual schemas promote sexual desire and arousal; negative elements of sexual schemas inhibit sexual desire and arousal (Anderson & Cyranowski, 1994). These green-light (positive approach aspects) and red-light (negative avoidance aspects) elements of a person's sexual schema are important because sexual arousal is always a product of competing excitatory (desire) and inhibitory (anxiety) tendencies (Janssen, Vorst, Finn, & Bancroft, 2002).

Sexual Orientation

A key component of postpubescent sexual scripts is the establishment of sexual orientation, or one's preference for sexual partners of the same or other sex. Sexual orientation actually exists on a continuum as about one-third of all adolescents have participated in at least one homosexual act (with more boys than girls having done so; Money, 1988). The sexual orientation continuum therefore extends from exclusively heterosexual through a bisexual orientation and continues to an exclusively homosexual orientation. Most adolescents rather routinely commit to a heterosexual orientation, but about 4% of males and 2% of females do not, and these percentages are higher if one includes a bisexual orientation.

Though not conclusive, research suggests that sexual orientation is not a choice; it is something that happens to the adolescent rather than something that is more deliberate or results from soul-searching (Money, 1988). Part of the explanation for why people develop a homosexual orientation or a heterosexual orientation is genetic (see the twin studies by Bailey & Pillard, 1991; Bailey, Pillard, Neale, & Agyei, 1993) and part of the explanation is environmental. Unfortunately, this literature is characterized more by rejected hypotheses than by confirmed ones. For instance, there is little evidence to support the idea that homosexuality emanates from a domineering mother and weak father (Bell, Weinberg, & Hammersmith, 1981) or from exposure to an older same-sex seducer (Money, 1988). The most promising research frontiers in understanding sexual orientation are those in genetics (Bailey & Pillard, 1991; Hamer, Magnuson, Hu, & Pattatucci, 1993) and in the prenatal hormonal environment (Berenbaum & Snyder, 1995; Kelly, 1991; Paul, 1993). As to the prenatal hormonal environment, early hormonal exposure (androgens, estrogens) in the womb influences subsequent adolescent sexual orientation.

Table 4.2 Gender Differences in Mate Preferences

Variable	Men	Women	Gender Difference?
Physical Appearance			
Is good-looking	3.59	2.58	Yes, greater preference for men
Age			
Is younger than me by 5 years	4.54	2.80	Yes, greater preference for men
Is older than me by 5 years	4.15	5.29	Yes, greater preference for women
Earning Potential			
Holds a steady job	4.27	5.38	Yes, greater preference for women
Earns more than me	5.19	5.93	Yes, greater preference for women
Has more education than me	5.22	5.82	Yes, greater preference for women
Other Variables			
Has been married before	3.35	3.44	No significant gender difference
Has children	2.84	3.11	Yes, greater preference for women
Is of a different religion than me	4.24	4.31	No significant gender difference
Is of a different race than me	3.08	2.84	Yes, greater preference for men

Note. The possible range for each score was 1 (not at all) to 7 (very willing to marry someone who...).

Source: From "Mate Selection Preferences: Gender Differences Examined in a National Sample," by S. Sprecher, Q. Sullivan, and E. Hatfield, 1994, *Journal of Personality and Social Psychology*, 66, pp. 1074–1080. Copyright 1994 by the American Psychological Association. Adapted with permission.

Evolutionary Basis of Sexual Motivation

Sexual motivation and behavior have an obvious evolutionary function and basis (reproduction and the survival of the species). In an evolutionary analysis, men and women are hypothesized to have evolved distinct psychological mechanisms that underlie their sexual motivations and mating strategies (Buss & Schmitt, 1993). Compared to women, men have shorter-term sexual motivations, impose less stringent standards, value sexual accessibility cues such as youth, and value chastity in mates. Compared to men, women value signs of a man's resources (spends money, gives gifts, lives an extravagant lifestyle), social status and ambition, and promising career potential (Buss & Schmitt, 1993).

Evolutionary psychologists start with the assumptions that sexual behavior is strongly constrained by genes and that genes determine one's mating strategies at least as much as (and often more so than) does rational thought. Furthermore, genes keep the evolutionary message simple: men want young, attractive mates; women want powerful, high-status mates.⁵ Men's and women's different mate-selection preferences appear in Table 4.2 (Sprecher, Sullivan, & Hatfield, 1994). The data confirm that, essentially, men find physical attractiveness and youth important in selecting women partners, whereas women find earning potential important in selecting men partners. These data come from asking thousands of unmarried 19- to 35-year-old African American (36%) and

⁵Some differences emerge when examining the preference of homosexuals (Bailey, Gavlin, Agyei, & Gladue, 1994), as homosexual (like heterosexual) males rate the physical attractiveness of their partners as very important but, unlike heterosexual males, they do not show a strong preference for younger partners and are not as prone to sexual jealousy.

Caucasian-White (64%) men and women the question “How willing would you be to marry someone who . . . ,” and then from asking each participant to respond on a scale ranging from 1 (not at all willing) to 7 (very willing). The table’s righthand column summarizes verbally where gender differences do and do not exist.

To appreciate men’s and women’s different mating strategies, open the local newspaper (or online dating service website) to view the personal ads (Baize & Schroeder, 1995; Harrison & Saeed, 1977; Wiederman, 1993). Men look for something akin to a trophy wife/mate. In turn, the more attractive the woman is, the more she demands from a potential mate in terms of status and wealth. In turn, the higher the man’s social status and wealth, the more he expects in terms of a woman’s looks. This same mating strategy preference can be seen during speed-dating (i.e., a series of 4-minute face-to-face interactions with a dozen potential partners). Speed dating men highly preferred physically attractive women, women highly preferred men with strong earning prospects, and everyone preferred “personable” partners, though these ideal preferences interestingly did not predict follow-up dating behavior (Eastwick & Finkel, 2008).

Although these conclusions are blatantly and undeniably sexist, they nonetheless represent the expressed preferences of men and women. Such preferences might not be consistent with cultural aspirations, but they are consistent with evolutionary aspirations. This sexist mating strategy hypothesis might be limited, however, only to some, not to all, people. It seems that “likes attract,” as women who think a lot about their appearance do strongly prefer men of high status, just as do men who think a lot about their wealth and status are very picky about a woman’s youth and looks (Buston & Emlen, 2003). However, when men and women value in themselves factors other than status and attractiveness (e.g., family commitment, sexual fidelity), then they prefer mates with these characteristics more than mates with high status or attractiveness. Even using an evolutionary perspective the homely mate can make the best mate if he or she is a great parent to the offspring. Related to this last point, it is interesting to note that while women rate highly muscular men as sexier, more physically dominant, and less committed to their mates than nonmuscular men, what women rate as most attractive is moderate (not high) muscularity (Frederick & Haselton, 2007).

People also have multiple mating strategies, as they consider first the “necessities” and then the “luxuries” in mate preferences (Li, Bailey, Kenrick, & Linsenmeier, 2002). At the “must have” necessities level, men value physical attractiveness and women value status and resources. As they consider possible mates, men really want to know first that a woman is at least average in physical attractiveness and women want to know first that a man is at least average in social status. Both sexes also rate intelligence and kindness as necessities in their possible mates. If the potential mate passes the so-called test at the necessities level, then men and women begin to consider luxuries such as a sense of humor, liveliness, creativity, and an exciting personality. The conclusion is that men and women possess what amounts to “mating budgets” (men have some level of status to spend, women have some level of attractiveness to spend) and these mating budgets are first spent on securing the minimal necessities—must be at least average on intelligence, kindness, and, depending on sex, status or attractiveness, next spent on acquiring a sufficient level of these necessities, and finally spent on luxuries that might make for more interesting interactions but that hold little reproductive value (Kenrick, Groth, Trost, & Sadalla, 1993).

FAILURES TO SELF-REGULATE PHYSIOLOGICAL NEEDS

Trying to exert conscious mental control over our physiological needs often does more harm than good. Still, we try.

People try to control their appetites—their hunger, weight, drinking of alcohol and coffee, sexual impulses, chronic back pain, and the like. Such appetites can at times overwhelm us, and in this experience of being overwhelmed, we look for ways to override our physiological needs in favor of mental control. When mental states regulate physiological needs, self-regulation occurs. But when biological urges overwhelm mental control, self-regulation failure occurs (Baumeister, Heatherton, & Tice, 1994).

People fail at self-regulation for three primary reasons (Baumeister et al., 1994). First, people routinely underestimate how powerful motivational force biological urges can be when they are not currently experiencing them (Loewenstein, 1996). That is, when we are not feeling hungry, we tend to forget how motivated to eat we can be when hungry.

Second, people can lack standards, or they have inconsistent, conflicting, unrealistic, or inappropriate standards (Karoly, 1993). For instance, many people have extreme (unrealistic) standards for thinness or conflicting standards with the body type they are born with versus the body type they would like to have (Brownell, 1991). Fragile (i.e., unrealistic) mental controls are easily overwhelmed by natural biological forces. People also have conflicting standards (e.g., eating enjoyment vs. weight control) such that the salience of an incompatible goal (enjoy eating) can overwhelm one's weight control standard (Stroebe, Boland, Manfredo, & Al-Falaj, 2008).

Finally, people fail at self-regulation because they fail to monitor what they are doing as they become distracted, preoccupied, overwhelmed, or intoxicated (Kirschenbaum, 1987). Alcohol, for instance, reduces self-awareness and self-monitoring, and intoxicated people become more likely to do things outside of their normal mental control (Hull, 1981). People who are emotionally exhausted forego their usual dietary restraint standard and binge (Hofmann, Rauch, & Gawronski, 2006). Thus, even when people have realistic and appropriate standards to cognitively regulate their physiological needs, they are still nonetheless prone to being overwhelmed by pent-up biological forces once they are distracted or exhausted away from attending to these standards.

What all these mishaps have in common is two things: (1) underappreciating how potent and attention-getting physiologically and biologically based motives can be and (2) losing control over one's attention and standards. Mental control that focuses on realistic standards, long-term goals, and on monitoring what one is doing generally leads to self-regulation success (Baumeister et al., 1994).

SUMMARY

Thirst, hunger, and sex are physiological needs. The anchor for the chapter was Hull's biologically based drive theory (Figure 4.3). According to drive theory, physiological deprivations and deficits give rise to bodily need states, which in turn give rise to a psychological drive, which motivates the consummatory behavior that results in drive reduction. Then, time goes by, the physiological deprivations recur, and the cyclical process repeats itself. In outlining the regulatory process for thirst, hunger, and sex, the chapter introduced seven fundamental processes: physiological need, psychological drive, homeostasis, negative feedback, multiple inputs and outputs, intraorganismic

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influences, and extraorganismic influences. One concept—that of homeostasis—has dominated motivational neuroscience and its study of physiological needs for the last 50 years.

Thirst is the consciously experienced motivational state that readies the person to perform behaviors necessary to replenish a water deficit. Its activation and satiety is rather straightforward, biologically speaking. Water depletion inside (intracellular thirst) and outside (extracellular thirst) the cells activate thirst. Water restoration satiates thirst, especially when injected water hydrates the cells. Drinking behavior (that is not necessarily related to thirst) is influenced further by extraorganismic variables, such as water availability, sweet taste, addictions to alcohol and caffeine, and cultural prescriptions such as “drink eight glasses of water per day.”

Hunger and eating involve a complex regulatory system of both short-term (glucostatic hypothesis) and long-term (lipostatic hypothesis, including set-point theory) regulation. According to the glucostatic hypothesis, glucose deficiency stimulates eating by activating the lateral hypothalamus, whereas glucose excess inhibits eating by activating the ventromedial hypothalamus. According to the lipostatic hypothesis, shrunken fat cells initiate hunger, whereas normal or larger fat cells inhibit it. Eating behavior (that is not necessarily related to hunger) is influenced further by environmental incentives such as the sight, smell, and taste of food, the presence of others, and by situational pressures such as a group norm. These environmental factors sometimes interfere with and compete against physiological factors. Dieting, for instance, represents a person's attempt to supplant involuntary physiological controls for eating with voluntary cognitive controls. Such a cognitively regulated eating style has implications associated with bingeing, restraint release, weight gain, and obesity. A comprehensive model of hunger regulation is offered (Figure 4.7). In addition, the well-accepted notion of biological set points is challenged with evidence suggesting that physiological needs hover around changing settling points (rather than a fixed set point).

Sexual motivation rises and falls in response to a host of factors, including hormones, external stimulation, external cues (facial metrics), cognitive scripts, sexual schemas, and evolutionary pressures. Despite these many factors, sexual motivation in the human male is relatively straightforward as desire reflects physiological forces such as a linear triphasic sexual response cycle (desire–arousal–orgasm) a close correlation between erectile response and psychologically felt desire, relatively homogenous sexual scripts, and stereotypical mating preferences and strategies. Sexual motivation in women is more complex, as women's sexual response cycle is often not linear, revolves around emotional intimacy needs, the correlation between genital response and psychological desire is low, and sexual scripts and sexual schemas are heterogeneous. Research on the determinants of sexual orientation points to the importance of genetics, prenatal developmental influences, and the idea that people discover and become aware of their sexual orientation rather than deliberately choose it.

Trying to exert conscious mental control over our physiological needs often does more harm than good. People fail to self-regulate their bodily appetites for three primary reasons—namely, they (1) underestimate how powerful a motivational force biological urges can be when they are not currently experiencing them, (2) lack standards or have inconsistent standards, and (3) fail to monitor what they are doing, as they become distracted from their cognitive regulation and default to pent-up physiological needs.

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Chapter 5

Intrinsic and Extrinsic Motivations

INTRINSIC AND EXTRINSIC MOTIVATIONS

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- Conceptual Understanding/High-Quality Learning

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READINGS FOR FURTHER STUDY

Consider the motivational decision making of different people trying to decide what to do.

As he observes employees at work, the company CEO does not like what he sees. Some employees are engaged and productive but others are not. He decides to create an ABC system in which the top 10% of employees are rated as A players, the middle 80% are rated as B players, while the bottom 10% are rated as C players. He decides to give fat raises and generous stock options to the A players, modest annual salary raises to the B players, and nothing to the C players, except a not-too-subtle message that they might want to look elsewhere for work. His thinking is that if he gives incentives and rewards for productivity and success but withholds these same incentives and rewards for mediocrity, then employees will make the adjustments he hopes for and behave in more desirable ways. That is, his way of changing his employees' behaviors is to implement a company-wide program in which incentives and rewards are offered and withheld in a strategic way (based on Byrne & Welsh, 2001).

Miles away, a bus carrying dozens of young men comes to a stop at 1:50 in the morning at the Marine Corps boot camp on Parris Island, South Carolina. Before the men have a chance to step off the bus, a drill instructor charges onto the bus barking orders and giving commands, expecting each word to lead to an immediate compliance response. The "forming" has begun. For the rest of the evening, the young men will hear as many as 15 commands per minute, such as "Let's go. Now. Move. Move! *Move!*" The emphasis is on heavy discipline, or what they soon come to learn as "heavy D." For the next 10 weeks, the drill instructor's commands will be ever present to ensure that the young recruits dress properly, show proper respect, wake up promptly in the morning, learn how to clean their weapons correctly, and do a hundred other actions the Marine way. Every mistake is met with immediate and severe punishment. The thinking is that the drill instructor's commands will in time become the means to regulate the recruits' behaviors, as their own interests and preferences are driven to silence by sheer fear. If all goes according to plan, what happens over those 11 weeks is that, one by one, a civilian is turned into a Marine. After all, boot camp is less about skills training and more about the loss of individuality and a new commitment to a cause—developing the new behavior-guiding identity of a Marine (based on Ricks, 1997).

Now consider your own motivational decision making as you get into your car and start the engine. Though you realize that buckling your seatbelt may very well save your life, you do not much feel like making the effort today. For some reason, you just cannot find within yourself the motivation to buckle up. But the car manufacturer has anticipated your seatbelt apathy. After a few seconds, a red light appears on the panel and

an irritating “bing, bing, bing” noise begins that promises to continue until you buckle up. The possibility that a police car might ticket you for not wearing your seatbelt also flashes across your mind. As you sit in the car contemplating whether or not to buckle up, the light is on, the noise continues, and the threat of a ticket looms. You reach for the seatbelt and buckle up, not in the name of safety but simply to escape from what is irritating (based on Geller, Casali, & Johnson, 1980).

The discussion throughout this chapter follows the spirit of stock options, urgent commands, and obnoxious buzzers by addressing the question of how external events generate motivational states. The examples above could just as easily be about other incentive-based events that stir us to action, such as grades in school, token economies in special education, rebate credit cards when shopping, and frequent flyer mileage programs when choosing which airline to fly. People do not inherently want to engage in the behaviors required to receive these incentives; rather, the motivation comes from the incentive. Basically, when attractive incentives are at stake, people do what they need to do to obtain the incentives; and when aversive incentives are at stake, people do what they need to do to rid themselves of the irritants. Because incentives and rewards exert such a strong and reliable effect on behavior, people such as CEOs, drill instructors, and automobile manufacturers often embrace extrinsic motivation as a strategy for tilting people’s decision making away from apathy and listlessness and toward wanting and action.

Practically every environment we find ourselves in discriminates between desirable and undesirable behaviors. Furthermore, practically every environment rewards us in one way or another for performing those desired behaviors and punishes us for performing those undesired behaviors. For instance, while driving, desirable behaviors include staying on your side of the road, driving 30 miles per hour on city streets, and making sure your exhaust pipe is not billowing out a cloud of black smoke. If drivers forego such desirable behaviors, the environment will rather quickly deliver an array of punishers, such as honks of the horn, speeding tickets, and steely-eyed stares from people with pro-environment bumper stickers. As a result, we generally follow our hedonistic tendencies (approach pleasure, avoid pain) and engage in those courses of action that we believe will produce reward and prevent punishment. Over time, we learn which behaviors generally bring us reward and pleasure and which other behaviors bring us punishment and aversion.

In the other chapters in this section on needs, motivation is said to arise from inner sources—physiological needs (Chapter 4), psychological needs (Chapter 6), and social needs (Chapter 7). Physiological needs explain why people eat and drink, psychological needs explain why people seek out optimal challenges and intimate relationships, and social needs explain why people try to prove their sense of competence to an audience of others and to influence those around them. To propose that people eat and drink, that people seek out challenges and relationships, and that people prove their competence and exert their influence because of their needs to do so, however, recognizes only part of the story. A person might also engage in these same behaviors out of an environmentally created reason to do so—that is, to obtain extrinsic offerings such as money, a special privilege, or the approval of others. A fruitful and comprehensive analysis of motivated behavior, according to the behavior theorists that will be introduced in this chapter (Baldwin & Baldwin, 1986; Skinner, 1938, 1953, 1986), requires that we add the analysis of how environmental incentives and consequences promote in us a sense of “want to.”

INTRINSIC AND EXTRINSIC MOTIVATIONS

Causal observation of day-to-day behavior suggests that our physiological, psychological, and social needs are sometimes silent, or at least somewhere on the back burner of consciousness. In schools, students are sometimes apathetic and disinterested in the school's curriculum. At work, employees are sometimes listless and slow to apply themselves. In hospitals, patients sometimes feel little desire to exercise and are reluctant to take their medicines. Such observations suggest that people do not always generate their own motivation from within. Instead, people sometimes turn passive and look to the environment to supply motivation for them. In school, teachers see this lack of inner motivation and, in response, they use grades, stickers, praise, recess privileges, and threats of doom to motivate their students. At work, employers use pay checks, bonuses, surveillance, competitions, and threats of termination to motivate their employees. In hospitals, doctors use orders, appeals to please loved ones, and implicit threats (e.g., "If you don't exercise more, then...") to motivate their patients. Such are the external events that constitute the incentives and consequences that generate extrinsic motivation.

Experience teaches us that there are two ways to enjoy an activity: intrinsically or extrinsically. Consider activities such as playing the piano, using the computer, or reading a book. On the one hand, the pianist may become interested and begin to enjoy piano playing because it is an opportunity to involve and satisfy psychological needs such as competence. The musician plays the piano to have fun, to exercise and develop valued skills, and to feel free and self-determined. On the other hand, the same piano-playing behavior can be enjoyed because it is an opportunity to make money, to win prizes and trophies, to impress others or to earn a college scholarship. Any activity, in fact, can be approached with either an intrinsic or an extrinsic motivational orientation (Amabile, 1985; Pittman, Boggin, & Ruble, 1983; Pittman, Emery, & Boggiano, 1982; Pittman & Heller, 1988; Ryan & Deci, 2000a).

Intrinsic Motivation

Intrinsic motivation is the inherent propensity to engage one's interests and to exercise one's capacities and, in doing so, to seek out and master optimal challenges (Deci & Ryan, 1985b). It emerges spontaneously from psychological needs and innate strivings for growth. When people are intrinsically motivated, they act out of interest, "for the fun of it," and for the sense of challenge the activity at hand provides. This behavior occurs spontaneously and is not done for any instrumental (extrinsic) reason.

As illustrated in Figure 5.1, people experience intrinsic motivation because they have psychological needs within themselves. Psychological needs, when they are nurtured and supported by the environment and by one's relationships, spontaneously give rise to the experience of psychological need satisfaction people feel while engaging in interesting activities. As the person fills in a challenging crossword puzzle or travels with a friend, intrinsic motivation arises out of the spontaneous experiences of feeling autonomous, feeling competent, and feeling related to others. Something about the activity allows the person to feel free (autonomy), effective (competence), or emotionally close (relatedness). When feeling this way, people express their intrinsic motivation by saying, "That's interesting," "That's fun," or "I enjoy doing that." For instance, interest and feeling

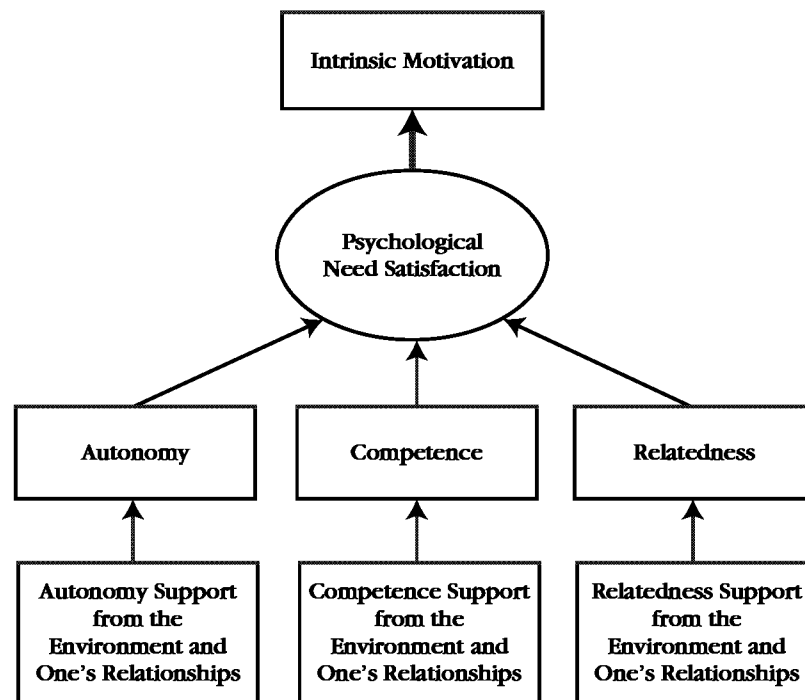


Figure 5.1 Origins of Intrinsic Motivation

free can spark the desire to read a book, and enjoyment and feeling competent can involve a person in a challenging crossword puzzle for hours.

What Is So Great about Intrinsic Motivation?

Intrinsic motivation is a natural motivation that emerges spontaneously out of people's psychological needs for autonomy, competence, and relatedness. It is worth nurturing and promoting because it leads to so many important benefits to the person, including persistence, creativity, conceptual understanding, and subjective well-being.

Persistence

The higher a person's intrinsic motivation, the greater will be his or her persistence on that task. Intrinsically motivated persistence can be seen in many acts of persistence, such as adherence to an exercise program (Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997) and greater continuing motivation to attend and stay in school (Hardre & Reeve, 2003).

Creativity

Creativity is typically undermined by controlling events such as being watched (Amabile, 1983), evaluated (Amabile, 1979), bossed (Koestner, Ryan, Bernieri, & Holt, 1984), or rewarded (Amabile, Hennessey, & Grossman, 1986). In contrast, creativity is typically enhanced by intrinsic motivation. The contribution of intrinsic motivation to creativity is so robust that Teresa Amabile (1983) proposed the following Intrinsic Motivation

Principle of Creativity: “People will be most creative when they feel motivated primarily by the interest, enjoyment, satisfaction, and challenge of the work itself—rather than by external pressures.”

Conceptual Understanding/High-Quality Learning

Intrinsic motivation enhances a learner’s conceptual understanding of what they are trying to learn. When high, intrinsic motivation promotes flexibility in one’s way of thinking (McGraw & McCullers, 1979), active information processing (Grolnick & Ryan, 1987), and tendency to learn in a way that is conceptual rather than rote (Benware & Deci, 1984; Boggiano, Flink, Shields, Seelbach, & Barrett, 1993; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005). When intrinsically motivated, learners think about and integrate information in a flexible, less rigid, and conceptual way (as opposed to memorizing and reproducing a right answer).

Optimal Functioning and Well-Being

Pursuing intrinsic goals (e.g., competence relatedness, autonomy in life) leads to better functioning and higher psychological well-being than does pursuing extrinsic goals (e.g., financial success, social recognition, physical image). Furthermore, pursuing intrinsic life goals is associated with greater self-actualization, greater subjective vitality, less anxiety and depression, greater self-esteem, higher-quality interpersonal relationships, fewer hours watching television and a lesser use of drugs such as alcohol and cigarettes (Kasser & Ryan, 1996, 2001). People who are intrinsically motivated are more likely to say things like “I feel energized” and “I look forward to each new day” than are people who are extrinsically motivated (Moller, Deci, & Ryan, 2006).

Extrinsic Motivation

Extrinsic motivation arises from environmental incentives and consequences, such as food, money, praise, attention, stickers, gold stars, privileges, tokens, approval, scholarships, candy, trophies, extra credit points, certificates, awards, smiles, public recognition, a pat on the back, prizes, and various incentive plans. Instead of engaging in an activity to experience the inherent satisfactions it can bring (as with intrinsic motivation), extrinsic motivation arises from some consequence that is separate from the activity itself. Whenever we act to gain a high academic grade, win a trophy, make a quota, impress our peers, or beat a deadline, our behavior is extrinsically motivated. That is, because we desire to gain attractive consequences and because we desire to avoid unattractive consequences, the presence of incentives and consequences creates within us a sense of wanting to engage in those behaviors that will produce the sought-after consequences.

Extrinsic motivation arises from a “Do this and you will get that” behavioral contract; it exists as an “in order to” motivation (as in, “Do this in order to get that”). The “this” is the requested behavior, and the “that” is the extrinsic incentive or consequence. It is also a “what’s in it for me?” type of motivation. Thus, because the answer to these questions is always the offering of an attractive environmental incentive (e.g., to get money) or the removal of an aversive environmental incentive (e.g., to end criticism), extrinsic motivation is an environmentally created reason (i.e., to get money, or to end criticism) to initiate or persist in an action.

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In casual observation, intrinsically and extrinsically motivated behaviors might look precisely the same. Just as the intrinsically motivated person reads a book, paints a picture, or goes to school or work, the extrinsically motivated person does so as well. Therefore, it is difficult to casually observe someone and know whether he or she is intrinsically or extrinsically motivated. The essential difference between the two types of motivation lies in the source that energizes and directs the behavior. With intrinsically motivated behavior, the motivation emanates from spontaneous psychological need satisfaction the activity provides; with extrinsically motivated behavior, the motivation emanates from incentives and consequences made contingent on enacting the observed behavior.

EXTERNAL REGULATION OF MOTIVATION: INCENTIVES, CONSEQUENCES, AND REWARDS

The study of the extrinsic regulation of motivation revolves around the language and perspective of operant conditioning. The term *operant conditioning* refers to the process by which a person learns how to operate effectively in the environment. Operating effectively means learning to engage in behaviors that produce attractive consequences (e.g., approval, money) while also learning not to engage in behaviors that produce aversive consequences (e.g., criticism, rejection). To communicate the language of operant conditioning, Baldwin and Baldwin (1986) offer the following conceptualization of motivated action:

$$S : R \rightarrow C$$

In this three-term model, *S*, *R*, and *C* stand for situational cue (i.e., incentive), behavioral response, and consequence, respectively. The colon between *S* and *R* shows that the situational cue sets the occasion for (but does not cause) the behavioral response. The arrow between *R* and *C* shows that the behavioral response causes a consequence to happen. Having the attention of a group of friends (*S*), for instance, does not cause a storyteller to recite jokes (*R*), but the group does serve as a cue for storytelling (*S* : *R*). Once told, the jokes cause the friends' reactions (*C*), such that the telling of the jokes causes the audience's subsequent laughter or ridicule (*R* → *C*).

Incentives

An incentive is an environmental event that attracts or repels a person toward or away from initiating a particular course of action. Incentives always precede behavior (i.e., *S* : *R*), and, in doing so, they create in the person an expectation that attractive or unattractive consequences are forthcoming. Some positive incentives might include a smile, an inviting aroma, the presence of friends, an envelope that looks like it holds a check, and a "ding" noise from the computer that signals "you have mail." Some corresponding negative incentives might include a grimace, a spoiled smell, the presence of enemies, junk mail, and a grinding noise from the computer that indicates it is about to crash.

The incentive value of an environmental event is learned through experience. Car noises do not bring heart-stopping fear to people until that noise has proven in the past to be a reliable predictor that disaster is right around the bend. Similarly, the sight of a particular person is not an attractive or aversive incentive until experience teaches us that

this person probably brings ridicule and rejection (we learn that this person is an aversive incentive) or humor and friendship (we learn that this person is an attractive incentive). It is this learning process (this “conditioning”) that shapes our later goal-directed behavior, as positive incentives cue approach behavior while negative incentives cue avoidance behavior.

These examples might appear to confound what constitutes an incentive and what constitutes a consequence. Both are external events that direct behavior, but two important differences exist. Incentives differ from consequences on the basis of (1) when each occurs and (2) how it motivates behavior. Incentives precede behavior ($S : R$) and excite or inhibit the initiation of behavior. Consequences follow behavior ($R \rightarrow C$) and increase or decrease the persistence of behavior.

What Is a Reinforcer?

From a practical point of view, defining a reinforcer is easy. It is any extrinsic event that increases behavior. If you get a paycheck for going to work and the offering of the paycheck keeps you coming to work, then the paycheck is a reinforcer.

From a theoretical point of view, however, the definition of a reinforcer is more difficult. Theoretically, a reinforcer must be defined in a manner that is independent from its effects on behavior. The problem with defining a reinforcer solely in terms of its effects on behavior is that its definition becomes circular: The cause produces the effect (reinforcers cause increased behavior), but the effect justifies the cause (increased behavior means it must be a reinforcer). Hence, in practice, the only way to identify a reinforcer is to actually give it and then wait and see if the reinforcer will increase behavior. Researchers and practitioners, however, have no means of identifying a reinforcer *before* using it. The challenge is therefore to know ahead of time whether or not the reinforcer will work—that is, will increase behavior (Timberlake & Farmer-Dougan, 1991). To get out of this circular quagmire, the researcher needs to select an extrinsic event never used before on a particular person (e.g., candy bar, field trip to the zoo) and know *a priori* whether it will or will not increase the sought-after desired behavior. In the history of motivation research, each of the following has been used to explain *why* reinforcers work to increase behavior:

1. It decreases drive (Hull, 1943). Food reinforces behavior because it decreases hunger.
2. It decreases arousal (Berlyne, 1967). A drug reinforces behavior because it calms anxiety.
3. It increases arousal (Zuckerman, 1979). A rock concert reinforces behavior because it stimulates and excites.
4. It is attractive to the person (Skinner, 1938). Money reinforces behavior because it is valued.
5. It produces pleasurable brain stimulation (Olds, 1969). Electrical stimulation of the medial forebrain bundle reinforces behavior because it is pleasurable.
6. It provides an opportunity to do a high-frequency behavior (Premack, 1959). The opportunity to watch television reinforces the completing of one’s homework.

Knowing that a particular environmental event produces one of these effects, the researcher and practitioner alike can explain, in advance, *why* the stimulus will reinforce behavior.

Managing Behavior by Offering Reinforcers

From a more practical perspective, consider one study that used various reinforcers to encourage an 8-year-old to wear an orthodontic device (Hall et al., 1972). The parents quickly observed that the child had little intrinsic motivation to wear the device, so they sought to create in the child an extrinsic motivation to wear the gear. As shown in Figure 5.2, the parents kept track of the percentage of time their child wore the orthodontic device (five observations per day at random times such as at breakfast, when leaving for school). Wearing the orthodontic device constituted the desired behavior, at least from the parent's point of view. In the first week (with no positive reinforcer), the child wore the device 25% of the time. The parents then began to praise their child each time they saw him wearing the orthodontic gear. With praise, the child wore the gear 36% of the time. For the next 2 weeks, the parents administered a delayed monetary reward. Each time the parents saw the child wearing the gear, they promised 25 cents at the end of the month. With money on the line compliance increased to 60% of the time. For a 2 week period, the parents next administered an immediate, on-the-spot, 25-cent reward for any observed compliance. Wearing the gear zoomed to 97%. For the next 5 days, the child received no positive reinforcers for compliance. Wearing dropped to 64%. Finally, for 2 weeks, the parents reintroduced the immediate 25-cent reward, and the child's compliance returned to 100%.

This study highlights two considerations about the nature of reinforcers. First, reinforcers vary in their quality. Money worked better than praise. For this child, money was a higher-quality reward than was praise. Second, the immediacy at which a reinforcer is delivered partly determines its effectiveness. Money given immediately was more effective than the same amount of money promised at some time in the future.¹

¹In addition to quality and immediacy, four other characteristics of a reward determine what is or is not a reinforcer. First, a reinforcer can be effective for one person but not for another, suggesting that the person/reinforcer fit is as important as is any particular characteristic of the reinforcer per se. Attention and candy might prove effective for young children (and ineffective for adults), whereas a job promotion and stock options might prove effective for adults (and ineffective for young children). Second, the same reinforcer can be effective for a person at one time but ineffective at another time. A cup of coffee might increase behavior early in the morning, but it may prove ineffective at night. Third, reinforcers vary in their intensity. Money is typically an effective reinforcer but only if considered to exceed some threshold of intensity. A penny is typically not effective as a reinforcer. Lastly, the rewards that administrators (e.g., parents, teachers, employers, therapists, coaches) think will work best often do not correspond to what their recipients actually find to be reinforcing (Green et al., 1988; Pace, Ivancis, Edwards, Iwata, & Page, 1985; Smith, Iwata, & Shore, 1995). For example, a parent might give a child a big hug, thinking the child highly values hugging, though the child might rather have a bowl of chocolate pudding. Thus, six considerations determine a positive reinforcer's effectiveness: (1) its quality; (2) its immediacy; (3) the person/reinforcer fit; (4) the recipient's need for that particular reward; (5) its intensity; and (6) the recipient's perceived value of the reinforcer.

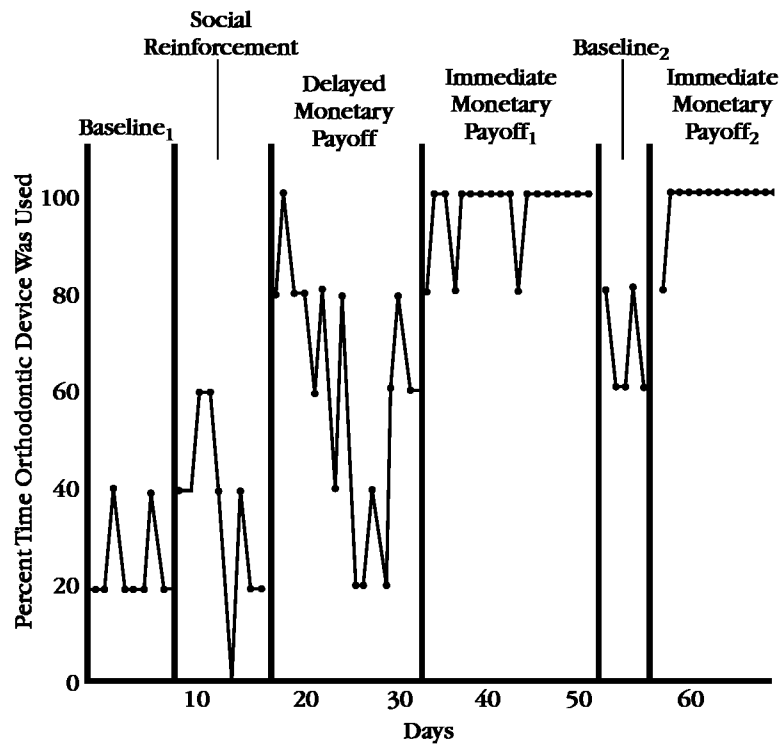


Figure 5.2 Effect of Reinforcement on Use of Orthodontic Device

Source: From "Modification of Behavior Problems in the Home With a Parent as Observer and Experimenter," by R. V. Hall, S. Axelrod, L. Tyler, E. Grief, F. C. Jones, and R. Robertson, 1972, *Journal of Applied Behavior Analysis*, 5, pp. 53–64. Copyright 1972 by the *Journal of Applied Behavior Analysis*. Reprinted with permission.

Consequences

There are two types of consequences: reinforcers and punishers. Among reinforcers, there are two types—positive and negative.

Positive Reinforcers

A positive reinforcer is any environmental stimulus that, when presented, increases the future probability of the desired behavior. Approval, paychecks, and trophies operate as positive reinforcers that occur after saying thank you, working a 40-hour week, and practicing athletic skills. What makes the approval, paycheck, or trophy a positive reinforcer is its capacity to increase the probability that the behaviors of being polite, working hard, or practicing for hours will recur in the future. That is, the person who receives the positive reinforcer becomes more likely to repeat the behavior than the person who receives no such attractive consequence for the same behavior. Additional positive reinforcers in the culture include money, praise, attention, grades, scholarships, approval, prizes, food, awards, trophies, public recognition, and privileges.

Negative Reinforcers

A negative reinforcer is any environmental stimulus that, when removed, increases the future probability of the desired behavior. Like positive reinforcers, negative reinforcers increase the probability of behavior. Unlike positive reinforcers, negative reinforcers are aversive, irritating stimuli. The shrill ring of the alarm clock is an aversive, irritating stimulus. Stopping the ringing is negatively reinforcing when it increases the probability that the would-be sleeper gets out of bed. In the same way, medicine that removes headache pain is a negative reinforcer that increases the sufferer's willingness to take this same medicine in the future (i.e., removing pain negatively reinforces the act of taking headache medicine). Additional negative reinforcers in the culture include whining, nagging, crying, surveillance, deadlines, time limits, a pet's incessant meowing or barking, and all sorts of pain.

It is relatively easy to visualize the approach behavior motivated by positive reinforcers. But a couple of examples will help illustrate how negative reinforcers motivate escape and avoidance behaviors. Escape removes a person from the aversive stimulus; avoidance prevents the aversive stimulus from occurring in the first place (Iwata, 1987). Consider how people escape from the sound of the alarm clock by getting out of bed, escape from the car buzzer by buckling a seatbelt, and escape from a whining child by leaving the room. Once we discover which behaviors are effective in removing us from the noise, buzzer, or whining, we tend to repeat these same escape maneuvers when the noise, buzzer, or whining returns. To prevent the aversive stimuli from occurring in the first place, however, people learn to get out of bed early (to avoid the noise), to buckle up before starting the car (to avoid the buzzer), and to stay away from the child (to avoid hearing the whines). Escape behaviors are reactive against aversive stimuli; avoidance behaviors are proactive in preventing our encountering them again.

One illustration that nicely captures how a negative reinforcer motivates escape and avoidance behaviors is the wearing of a postural harness (Azrin, Rubin, O'Brien, Ayllon, & Roll, 1968), shown in Figure 5.3. An automated shoulder harness to discourage postural slouching sends off a 55-dB tone whenever slouching at the shoulders occurs. Slouching sets off the aversive tone. To escape it, the wearer must adjust his or her posture accordingly. Noise termination negatively reinforces the escape behavior of thrusting back the shoulder blades. To avoid hearing the tone, the wearer must maintain correct posture by keeping his shoulders thrust backward. The motivation stems not from wanting good posture but, rather, from not wanting to hear that irritating blast of noise. For all 25 adults using such a postural harness in one study, a marked improvement in posture occurred. The postural harness (like a crying baby or a yelling drill sergeant) communicates a nice metaphor for illustrating extrinsic motivation, as the source of motivation (the 55-dB noise) clearly lies outside the individual—literally on the person rather than in him or her.

Punishers

A punisher is any environmental stimulus that, when presented, decreases the future probability of the undesired behavior. Criticism, jail terms, and public ridicule operate as punishers that occur after dressing sloppily, stealing another person's property, and endorsing antisocial attitudes. What makes the criticism, a jail term, or public ridicule a

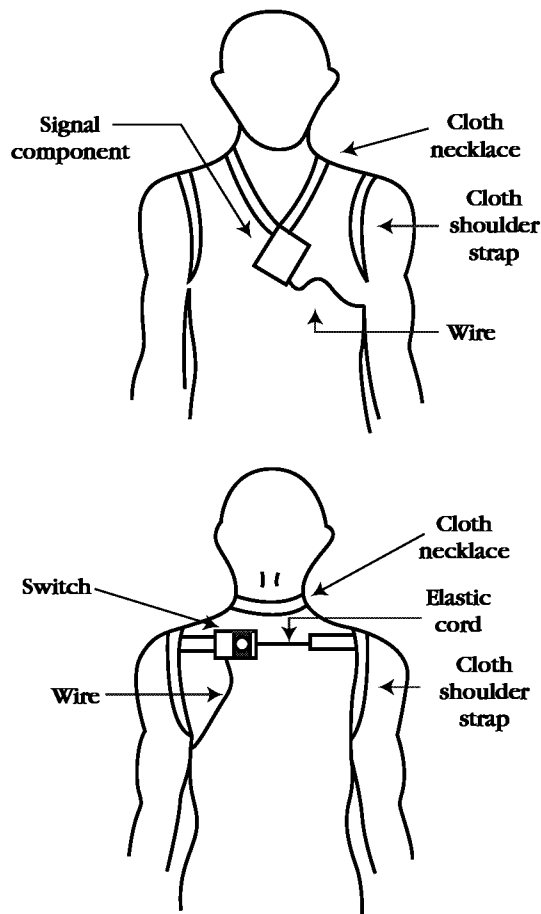


Figure 5.3 Front and Rear View of Person Wearing Postural Harness. The front view in the upper sketch shows the signal component worn around the neck. A wire runs from the component, under the arm, and to the posture switch on the back, which is shown in the lower sketch. The posture switch is attached by the shoulder straps, which are adjusted for the desired posture. Outer garments are worn over the assembly and thereby conceal it from view.

Source: From "Behavioral Engineering: Postural Control by a Portable Operant Apparatus," by N. H. Azrin, H. Rubin, F. O'Brien, T. Ayllon, and D. Roll, 1968, *Journal of Applied Behavior Analysis*, 2, pp. 39–42. Copyright 1968 by the *Journal of Applied Behavior Analysis*. Reprinted with permission.

punisher is its capacity to decrease the probability that the behaviors of careless dressing, stealing property, and voicing antisocial attitudes will recur in the future. That is, the person who receives the punisher is less likely to repeat the behavior than is the person who receives no such aversive consequence for doing the same thing.

From a behaviorist's point of view, the idea is this: You can engage in the undesirable behavior and suffer the aversive (punishing) consequence, or you can not engage in the undesirable behavior and be spared the aversive (punishing) consequence. That is, you can continue to dress sloppily, steal people's property, or endorse antisocial attitudes, but you will have to pay the price of doing so (in the form of criticisms, jail terms, and public ridicule).

Some confusion exists in discriminating punishers from negative reinforcers because both utilize aversive stimuli. For instance, when parents reprimand children for not cleaning their room, do the parents administer a negative reinforcer or a punisher? The reprimand is a punisher if its intent is to suppress the child's future room-cluttering behavior. Punishers say, "Stop it!" The reprimand is a negative reinforcer, however, if the child dutifully cleans his or her room to escape from or to avoid the reprimand before it occurs. Negative reinforcers say, "Do it!" Punishers decrease (undesirable) behavior; negative reinforcers increase (escape and avoidance) behavior.

When most people think of punishers, what comes to mind are aversive punishers. Aversive punishers are very commonly used in the culture, but a second type of punisher exists and is widely used—a response cost. Response costs suppress behavior by imposing the cost of losing some attractive resource if one engages in the undesirable behavior. The loss of the attractive resources is a "cost" for the "response" of enacting the undesired behavior. Examples of frequently used response costs include a suspended driver's license to suppress drunk driving, a toy taken away to suppress a child's tantrum, taking away a privilege such as watching a favorite television show to suppress ill manners, a \$200 ticket to suppress parking in a handicapped space, a \$5 fee to suppress using a live teller at the bank, and being grounded to suppress staying out past curfew.

Rewards

An extrinsic reward is any offering from one person given to another person in exchange for his or her service or achievement (Craighead, Kazdin, & Mahoney, 1981). Thus, when a teacher promises a prize if her students will participate more or when a workplace manager smiles to acknowledge an employee's successful performance, the teacher and the manager offer a reward (prize, smile) in exchange for another's service (participate more) or achievement (successful performance). Because extrinsic rewards are often confused with positive reinforcers, which are defined by their effects on behavior, rewards and reinforcers need to be distinguished. The distinction is that all positive reinforcers are rewards, while only some rewards function as positive reinforcers (because not all rewards increase behavior). That is, rewards sometimes work and sometimes do not. This is a very important practical point to make because people use rewards liberally and often irrespective of whether those rewards actually reinforce behavior. Rewards are therefore best seen as potential motivators.

Do Rewards Work—Do They Facilitate Desirable Behavior?

Why do people get so excited about the prospect of receiving an extrinsic reward? Why do rewards enliven positive emotion and facilitate behavior? As discussed in Chapter 3, people are inherently sensitive to signals of gain and pleasure. The physiological mechanism that makes us all inherently sensitive to reward (to gain, to pleasure) is the release of brain dopamine (Mirenowicz & Schultz, 1994; Montague, Dayan, & Sejnowski, 1996) and the subsequent activation of the behavioral activation system (BAS; Gray, 1990). Increased neural activity in the BAS is responsible for generating inherently positive feelings, such as hope and interest. It further facilitates behavior, as BAS activation literally and physically encourages students to move toward environmental signals of personal

gain. Thus, an extrinsic reward enlivens positive emotion and facilitates behavior because it signals the opportunity for a personal gain.

In practice, the offering of an extrinsic reward means that personal gain is imminent and that the situation that one is in has taken an unexpected turn for the better. For instance, routine and expected life events leave one's BAS unaffected. However, when events take an unexpected turn for the better (one receives a signal from the environment that personal gain is imminent), then dopamine release and BAS neural activation occur, as the brain inherently latches onto the environmental signal of the unexpected gain.

Do Punishers Work—Do They Suppress Undesirable Behavior?

The use of punishers is ubiquitous. To deter and to stop people's undesirable behavior, we criticize, we give cold looks, we complain, we take privileges away, we spank, and we utilize dozens of other extrinsic events to get other people to stop doing whatever undesirable behavior they are doing. But research shows that punishment is an ineffective motivational strategy—popular but ineffective nonetheless (Baldwin & Baldwin, 1986). Worse, punishment reliably generates a number of worrisome and unintentional “side effects,” including negative emotionality (crying, screaming, feeling afraid), impaired relationship between punisher and punishee, and negative modeling of how to cope with undesirable behavior in others.

Perhaps one of the most controversial uses of punishment is corporal punishment, or spanking (Gershoff, 2002). Figure 5.4 addresses the question of does corporal punishment work? Parents (and others) spank their children for different reasons, but mostly they spank to gain the child's immediate compliance to stop the undesirable behavior. Typically, this is spanking's intended consequence. The first solid line in Figure 5.4 means that spanking does produce this short-term effect. The figure also identifies a number of unintended consequences of corporal punishment. The second solid line in Figure 5.4 means that spanking further produces these 10 long-term effects. Children who are spanked are more likely to show aggression, antisocial behavior, poor mental health, poor moral internalization, an impairment of the parent–child relationship, and, as adults, aggression, poor mental health, adult abuse, and criminal behavior.

Looking over the consequences of corporal punishment, one sees little merit in spanking children as a motivational strategy (Gershoff, 2002). It does yield its intentional consequence, but it also yields a flurry of unintentional and undesirable consequences. If spanking is not to be recommended, then what does work? What works is the provision a positive, high-quality relationship with the parent so that the child willingly desires to internalize the parent's values, prescriptions, and proscriptions.

HIDDEN COSTS OF REWARD

The research on the distinction between intrinsic and extrinsic motivation began with this question: “If a person is involved in an intrinsically interesting activity and begins to receive an extrinsic reward for doing it, what happens to his or her intrinsic motivation for that activity?” (Deci & Ryan, 1985b, p. 43). For example, what happens to the motivation of the student who reads for the fun of it after she begins to receive money from her parents for reading? One might suppose that rewarding reading behavior with

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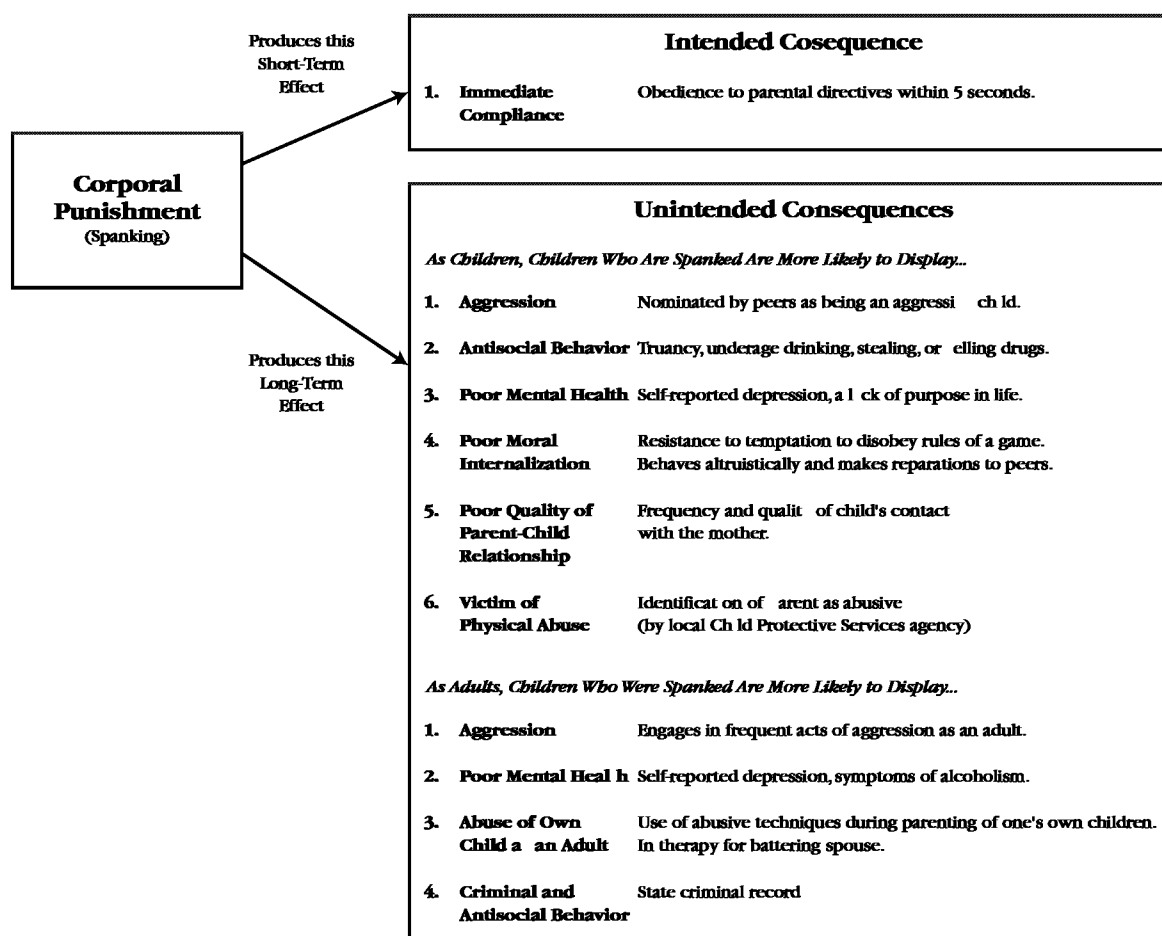


Figure 5.4 Immediate and Long-Term Consequences of Corporal Punishment (Spanking)

Source: From "Corporal Punishment by Parents and Associated Child Behaviors and Experiences: A Meta-Analytical and Theoretical Review," By E. T. Gershoff, 2002, *Psychological Bulletin*, 128, 539–579. Copyright 2002 by American Psychological Association. Adapted by permission.

a monetary prize would add to her motivation. Common sense argues that if a person enjoys reading and is also financially rewarded for it, then the intrinsic (enjoyment) and extrinsic (money) motivations should sum to produce some sort of super-motivation. And if you ask people to make predictions about what happens to a person's motivation under these conditions, increased motivation is what most people will predict (Hom, 1994).

Increased motivation, however, generally does not occur. Rather, the imposition of an extrinsic reward to engage in an intrinsically interesting activity typically undermines (has a negative effect on) future intrinsic motivation (Condry, 1977; Deci, Koestner, & Ryan, 1999; Kohn, 1993; Lepper, Greene, & Nisbett, 1973). The reward's adverse effect on intrinsic motivation is termed a "hidden cost of reward" (Lepper & Greene, 1978) because our society typically regards rewards as positive contributors to motivation (Boggiano, Barrett, Weiher, McClelland, & Lusk, 1987). People use rewards expecting to gain the benefit of increasing another person's motivation and behavior, but in doing so,

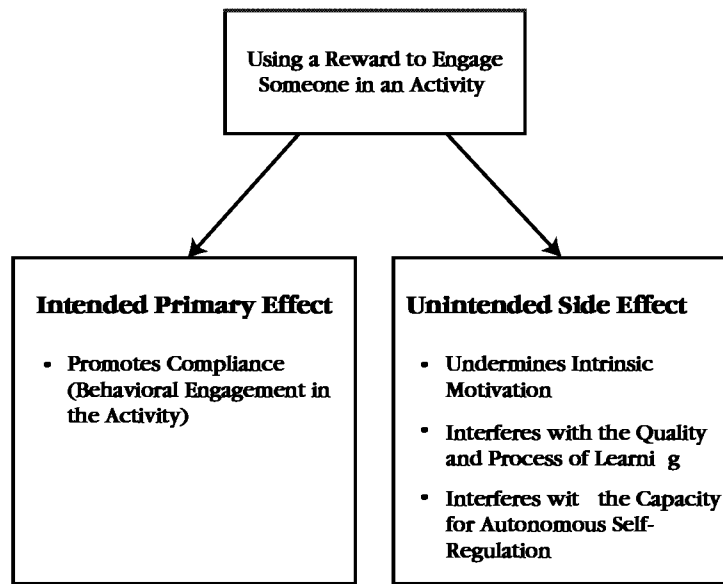


Figure 5.5 Intended and Unintended Effects of Extrinsic Rewards

they often incur the unintentional and hidden cost of undermining that person's intrinsic motivation toward the activity

Extrinsic rewards can have positive effects on motivation and behavior, as illustrated with the earlier postural harness and orthodontic gear examples. But extrinsic forms of motivation almost always come with a price—with hidden costs (see Figure 5.5). Undermining intrinsic motivation is a hidden cost of the use of rewards, but there are additional hidden costs as well (Deci & Ryan, 1987; Kohn, 1993). Extrinsic rewards also interfere with the process of learning. In school-based studies, the offering of extrinsic rewards has been shown to distract students' attention away from the material they are trying to understand and toward getting the reward. During a learning activity with a reward at stake, the extrinsically motivated student is more likely to attend to factual information and to getting a quick answer (thereby gaining the reward) at the expense of optimally challenging oneself, searching for a creative solution, or conceptually understanding the material and its relevance or importance to the person's life (Benware & Deci, 1984; Harter, 1978b; Shapira, 1976; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005). Extrinsic rewards also interfere with the person's development of autonomous self-regulation (Lepper, 1983; Ryan, 1993). After a history of always being rewarded for doing something (e.g., cleaning your room, mowing the lawn), reward recipients understandably begin to have difficulty regulating their behavior when not offered the reward. This reward-dependent behavior occurs because the presence versus absence of rewards, rather than one's intrinsic motivation and autonomous self-regulation, come to regulate one's behavior, such as whether or not to mow the lawn, when to mow the lawn, how long one should continue mowing the lawn once started, and so on.

The psychological need for autonomy (Chapter 6) provides one way for understanding the hidden costs of reward (Deci & Ryan, 1987). When experimental participants are paid (Deci, 1972), promised an award (Lepper et al., 1973), promised a toy (Lepper

& Greene, 1975), threatened with a punisher (Deci & Casio, 1972), given a deadline (Amabile, DeJong, & Lepper, 1976), given a directive (Koestner et al., 1984), involved in competitive pressure (Reeve & Deci, 1996), or watched over as they work (i.e., surveillance; Pittman, Davey, Alafat, Wetherill, & Kramer, 1980), these participants gradually lose their perception of autonomy and show decreased intrinsic motivation. In other words, a person's perceived locus of causality (Chapter 6) gradually becomes less and less internal and more and more external (deCharms, 1984). What was once "play" becomes "work." What was once "I do it for fun" becomes "I do it for the reward." When rewards are at stake, people read less and less out of interest and more and more for money or grades. Basically, coercing individuals to engage in a task, even when using unquestionably attractive rewards like money, instigates a shift in their understanding of why they choose to engage in that task from one of autonomy to one of environment (Deci et al., 1999).

Early experiments by Mark Lepper and his colleagues nicely illustrate the hidden costs of extrinsic rewards (Greene & Lepper, 1974; Lepper & Greene, 1975, 1978; Lepper et al., 1973). Preschool children with a high interest in drawing were grouped into one of three experimental conditions: expected reward, no reward, and unexpected reward. In the expected reward group (extrinsic motivational orientation), children were shown an extrinsic reward—an attractive Good Player certificate featuring the child's name and a big blue ribbon—and asked if they wanted to draw in order to win the reward. Children did find this reward to be an attractive one. In the no reward group (intrinsic motivational orientation), children were simply asked if they wanted to draw. In the unexpected reward group, children were asked if they wanted to draw, but they unexpectedly received the Good Player certificate after drawing. One week later, the experimenters provided the children with another opportunity to draw during their free time. During this second week, children who drew in order to win the certificate (expected reward group) spent significantly less time drawing than did children in the other two groups. In effect, children in the expected reward group lost their intrinsic interest in drawing. The no reward and unexpected reward groups showed no such interest decline. The interest maintenance of the unexpected reward group is important because it shows that the extrinsic motivational orientation (rather than the reward per se) caused children's decreased interest in drawing.

In interpreting these findings, one might feel a bit of skepticism and muse over the fact that the sample of participants included preschoolers, the experimental task was drawing, and the reward was an artificial certificate. Perhaps one might then conclude that the findings have little to do with more complex adult motivations. These findings, however, have been replicated using adults, different tasks, and different rewards (see Deci et al., 1999). In accepting the generality of the negative effects (i.e., "the hidden costs") of an extrinsic motivational orientation (Deci et al., 1999; Deci & Ryan, 1985b; Kohn, 1993; Lepper & Greene, 1978; Rummel & Feinberg, 1988; Sutherland, 1993), one might turn the tables and ask whether rewards always decrease intrinsic motivation. This is precisely what psychologists questioned next. After three decades of research, the conclusion is that extrinsic rewards do generally undermine intrinsic motivation, but not always (Deci et al., 1999; Eisenberger, Pierce, & Cameron, 1999; Rummel & Feinberg, 1988; Wiersma, 1992). In particular, two factors explain which types of rewards decrease intrinsic motivation: expectancy and tangibility.

Expected and Tangible Rewards

People often engage in behaviors in order to receive a reward. In doing so, people expect to receive a reward if they engage in a particular behavior. If, however, the person engages in the behavior with no such knowledge of a reward yet still receives a reward once the task is completed, then the reward is an unexpected one. The earlier study with children drawing for Good Player certificates (Lepper et al., 1973) showed that reinforcers decrease intrinsic motivation only when the person expects that his or her task engagement will yield a reward. The telltale sign that a person expects a reward for task participation is an if-then or in-order-to orientation, such as, "If I read this book, then I can watch TV." Expected rewards undermine intrinsic motivation, while unexpected rewards do not (Greene & Lepper, 1974; Orlick & Mosher, 1978; Pallak, Costomiris, Sroka, & Pittman, 1982).

A second factor in understanding which rewards undermine intrinsic motivation and which do not is the distinction between tangible and verbal rewards. Tangible rewards, such as money, awards, and food, tend to decrease intrinsic motivation, whereas verbal (i.e., intangible) rewards, such as praise, do not (Anderson, Manoogian, & Reznick, 1976; Blank, Reis, & Jackson, 1984; Cameron & Pierce, 1994; Deci, 1972; Dollinger & Thelen, 1978; Kast & Connor, 1988; Koestner, Zuckerman, & Koestner, 1987; Sansone, 1989; Swann & Pittman, 1977). In other words, rewards that one can see, touch, feel, and taste generally decrease intrinsic motivation, whereas verbal, symbolic, or abstract rewards do not.

Implications

The two limiting factors of expectancy and tangibility suggest that rewards decrease intrinsic motivation only when they are expected and tangible. This conclusion is a sort of good news/bad news message. The good news is that extrinsic rewards can be used in a way that does not put intrinsic motivation at risk. The bad news is that our society so often relies on expected and tangible rewards to motivate others. Money, bonuses, paychecks, prizes, trophies, scholarships, privileges, grades, gold stars, awards, honor-roll lists, incentive plans, recognition, food, frequent flyer miles, and so on are ubiquitous incentives and consequences in Western societies (Kohn, 1993). In practice, therefore, it is not so comforting to say that only expected and tangible extrinsic rewards will decrease intrinsic motivation because so many rewards are presented in an expected and tangible way.

Expected, tangible rewards actually put more at risk than just intrinsic motivation (Condry, 1977, 1987; Deci & Ryan, 1987; Kohn, 1993). Extrinsic reinforcers not only decrease intrinsic motivation, they also interfere with both the process and quality of learning (recall Figure 5.5). During a learning activity, extrinsic rewards distract the person's attention away from learning and toward getting a reward. Rewards shift the learner's goals away from attaining mastery in favor of attaining extrinsic gain (Harter, 1978b; Pittman et al., 1983; Shapira, 1976). Extrinsically motivated learners are also more prone to a negative emotional tone (e.g., frustration; Garbarino, 1975) and less prone to positive emotion (e.g., enjoyment; Harter, 1978b; Ryan & Connell, 1989; Skinner & Belmont, 1993). Furthermore, extrinsically motivated learners are relatively passive information processors (Benware & Deci, 1984).

Rewards interfere with the quality of learning by narrowing the would-be learner's attention toward only memorizing factual information at the expense of gaining a conceptual understanding of the material (Benware & Deci, 1984; Boggiano et al., 1993; Flink, Boggiano, & Barrett, 1990). Rewards further put at risk a learner's flexibility in her way of thinking and problem solving (as she tries to produce a right answer quickly rather than discover an optimal solution; McGraw & McCullers, 1979). Expected, tangible rewards also undermine creativity (Amabile, 1985; Amabile et al., 1986), as people are more creative when they draw and write out of interest than when they draw and write for rewards. And when rewards are involved, learners typically quit as soon as some reward criterion is attained (e.g., reading only the 100 pages required for the test). When rewards are not involved, learners generally persist until curiosity is satisfied, interest is exhausted, or mastery is attained (Condry, 1977; Condry & Chambers, 1978). Thus, not only is intrinsic motivation potentially at risk with the use of expected and tangible rewards, but so is the quality of the learning process (e.g., preference for challenging work, attention, emotional tone, conceptual understanding, cognitive flexibility, and creativity).

A final point is that rewards interfere with the development of autonomous self-regulation (Lepper, 1983; Ryan, 1993). When the social environment tells people what to do and also provides expected and tangible rewards for doing it, people have little difficulty regulating their behavior in rewarding ways. But schools, families, places of work, and other settings often value autonomous self-regulation (i.e., initiative, intrinsic motivation). Learning to depend on rewards can forestall the development of self-regulatory abilities. For instance, students who do not receive rewards for engaging in their academic activities show a close connection between what they are interested in doing and how they spend their time, while children who do receive rewards for engaging in their academic activities show no connection between what they are interested in doing and how they spend their time (Joussemet, Koestner, Lekes, & Houliort, 2003). This finding occurs because the later students' behavior is regulated by other people's rewards, not by their own interests. If the environment does not offer incentives and consequences, then people with little autonomous self-regulation will have a difficult time finding the needed motivation within themselves.

Benefits of Incentives, Consequences, and Rewards

External regulation is not always bad or counterproductive (Covington & Mueller, 2001). Recognizing this, researchers and practitioners alike have tried to use rewards in ways that minimize the sort of detrimental effects illustrated in Figure 5.5. One way to do this, as discussed earlier, is to use rewards that are unexpected and verbal (e.g., praise) and refrain from using those that are expected and tangible (e.g., bribes). A second means is to limit the use of extrinsic motivators to tasks that have high social importance but low intrinsic appeal.

This insight raises the question of whether extrinsic motivators will have hidden costs on tasks that are not very interesting in the first place. In other words, if a person has little or no intrinsic motivation toward the task to undermine, then intrinsic motivation is not likely to be put at risk by the offering of a reward (because there is little or no intrinsic motivation present in the person to undermine). Indeed, research shows that the negative impact of extrinsic rewards on intrinsic motivation is limited to interesting

activities (Deci et al., 1999), as extrinsic rewards have no effect—not an undermining effect, not a facilitating effect—on a person’s intrinsic motivation for uninteresting tasks.

Incentives, consequences, and rewards have their benefits. Rewards can make an otherwise uninteresting task seem suddenly worth pursuing. So long as the reward is attractive enough, rewarded individuals will engage in almost any task. Children will eagerly wash dishes if it means that doing so will gain them a new toy. This is typically not so with unrewarded children, because washing dishes is just not an intrinsically interesting thing to do for most children. Without a reward at stake, those dishes stay piled in the sink. In applied settings, behaviorists often promise rewards if their clients perform behaviors like being on time, showing assertiveness and participating in a group discussion. They do so because their experience tells them that, without a reward at stake, their clients will not engage in these sorts of low-interest behaviors. Consider the value of extrinsic motivators in the following instances in which researchers used rewards to increase socially important but intrinsically uninteresting tasks:

- Developing daily living skills, such as dressing (Pierce & Schreibman, 1994)
- Improving children’s reading fluency (Eckert, Ardoin, Daly, & Martens, 2002)
- Getting motorists to stop at stop signs (Van Houten & Retting, 2001)
- Preventing drunk driving (Geller, Altomari, & Russ, 1984)
- Participating in recycling (Austira, Hatfield, Grindle, & Bailey, 1993; Brothers, 1994)
- Participating in energy conservation (Staats, Van Leeuwen, & Wit, 2000)
- Motivating young children to start their homework (Miller & Kelley, 1994)
- Teaching autistic children to initiate conversations (Krantz & McClannahan, 1993)
- Preventing undesirable behaviors such as biting (Fisher et al., 1993)
- Teaching self-control to children with attention-deficit hyperactivity disorder (Binder, Dixon, & Ghezzi, 2000)
- Increasing older adults’ participation in physical activities (Gallagher & Keenan, 2000)

In each of these examples, an argument can be made that the society’s concerns for promoting desirable behavior from its citizens outweighs the concerns for preserving or protecting the individual’s autonomy, intrinsic motivation, quality of learning, and autonomous self-regulation. Therefore, it is fine and well to use extrinsic motivators when another person’s intrinsic motivation is low, right? Not necessarily. Consider the following four reasons not to use extrinsic motivators, even for intrinsically uninteresting endeavors (Kohn, 1993):

1. Extrinsic motivators still undermine the quality of performance and interfere with the process of learning.
2. Using rewards distracts attention away from asking the hard question of why another person is being asked to do an uninteresting task in the first place.
3. There are better ways to encourage participation than extrinsic bribery (e.g., consider autonomy-supportive environments, to be discussed in Chapter 6).

4. Extrinsic motivators still undermine the individual's long-term capacity for autonomous self-regulation.

When all is said and done, many people believe that extrinsic motivators simply carry too high a psychological cost in terms of intrinsic motivation, the process of learning, the quality of learning, and autonomous self-regulation. But such a conclusion turns out to be more of the beginning of the story on extrinsic motivators than it does the story's end, as explained in the next section on cognitive evaluation theory.

COGNITIVE EVALUATION THEORY

When people use external events as incentives and consequences, they generally seek to create in others an extrinsic motivation for engaging in that activity. Much of the spirit behind the use of an extrinsic motivator is their effort to shape, influence, or outright control another person's behavior. Sometimes the attempt to control is obvious (e.g., using money to bribe a child to wear orthodontic gear; see Figure 5.2), but other times it is more seductive (e.g., giving free soft drinks at a bar to anyone agreeing to be a designated driver; Brigham, Maier, & Goodner, 1995). Thus, one potential purpose behind almost any extrinsic motivator is to control another person's behavior—that is, to increase some desirable behavior (or to decrease some undesirable behavior). But there is a second purpose. Incentives, consequences, and rewards also provide feedback that informs the person about her competence at the task. Rewards such as money, awards, good grades, academic scholarships, and verbal praises not only function to increase behavior (i.e., control behavior) but also to communicate a message of a job well done (i.e., inform competence).

Cognitive evaluation theory asserts that *all* external events have both a controlling aspect and an informational aspect (Deci & Ryan, 1985b). The theory presumes that people have psychological needs for autonomy and competence (Chapter 6). Furthermore, it is the controlling aspect of an external event that affects the person's need for autonomy, whereas it is the informational aspect of an external event that affects the person's need for competence. Formally, cognitive evaluation theory exists as the set of three propositions shown in Table 5.1.

According to Proposition 1, external events (e.g., choice) that promote an internal perceived locus of causality (PLOC) promote intrinsic motivation because these events involve or satisfy the need for autonomy. External events (e.g., reward) that promote an external PLOC promote extrinsic motivation because these events neglect the need for autonomy and instead establish an if-then contingency between a behavior and a forthcoming consequence. Proposition 1 therefore asks, "Is the purpose of the extrinsic event to control another person's behavior?" If not, autonomy and intrinsic motivation will be preserved; if so, autonomy and intrinsic motivation will be undermined as extrinsic motivation replaces intrinsic motivation.

According to Proposition 2, external events that increase perceived competence (e.g., praise) promote intrinsic motivation, whereas events that decrease perceived competence (e.g., criticism) undermine this motivation. Hence, the more an external event communicates positive effectance information, the more likely it is to satisfy the need for competence and increase intrinsic motivation. Proposition 2 therefore asks, "Is the purpose of the extrinsic event to inform another person's sense of competence?" If so,

Table 5.1 Cognitive Evaluation Theory**Proposition 1**

External events affect a person's intrinsic motivation when they influence the perceived locus of causality (PLOC) for that behavior. Events that promote a more external PLOC will decrease intrinsic and increase extrinsic motivation, whereas those that promote a more internal PLOC will increase intrinsic and decrease extrinsic motivation.

Proposition 2

External events affect a person's intrinsic motivation for an optimally challenging activity when they influence the person's perceived competence. Events that promote greater perceived competence will enhance intrinsic motivation, whereas those that diminish perceived competence will decrease intrinsic motivation.

Proposition 3

Events relevant to the initiation and regulation of behavior have three potential aspects, each with a functional significance. The informational aspect facilitates an internal PLOC and perceived competence, thus enhancing intrinsic motivation. The controlling aspect facilitates an external PLOC, thus undermining intrinsic motivation and promoting extrinsic motivation. The amotivating aspect facilitates perceived incompetence, thus undermining intrinsic motivation and promoting amotivation. The relative salience of these three aspects to a person determines the functional significance of the external event.

Source: Adapted with permission from *Intrinsic Motivation and Self-Determination in Human Behavior*, by E. L. Deci and R. M. Ryan, 1985a, New York: Plenum. Copyright 1985, Plenum Press.

perceived competence and intrinsic motivation will rise and fall to the extent that the external event communicates positive versus negative effectance information.

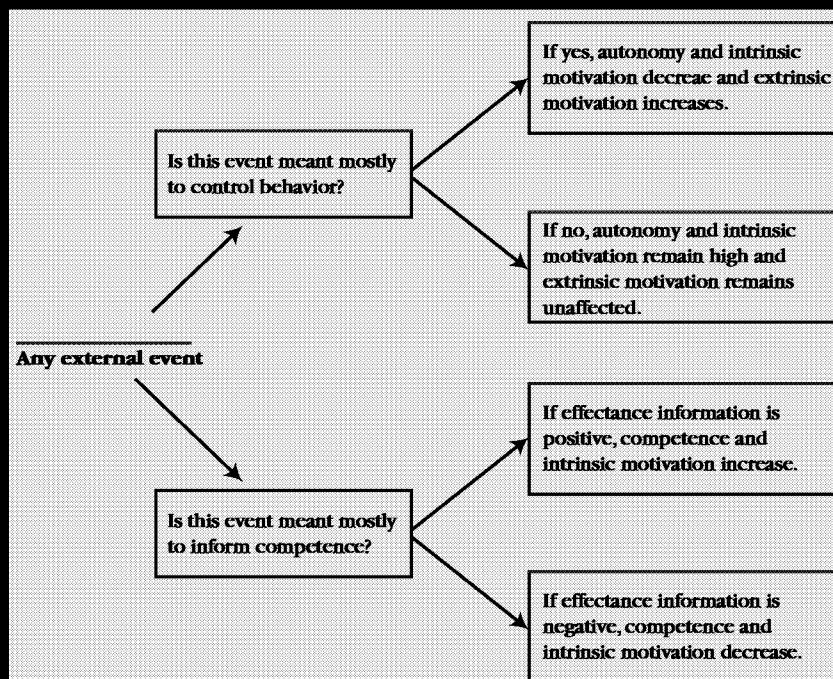
The contribution that the first two propositions offer for a comprehensive understanding of the motivational significance of incentives, consequences, and rewards is this: External events affect not only a person's *behavior* but, in addition, a person's *psychological needs*.

Proposition 3 ties together the first two propositions into a full theoretical statement. According to Proposition 3, the relative salience of whether an event is mostly controlling or mostly informational determines its effects on intrinsic and extrinsic motivation. Relatively controlling events undermine intrinsic motivation (via their harmful effect on autonomy) and promote extrinsic motivation. Relatively informational events increase intrinsic motivation (via their beneficial effect on competence). It is in Proposition 3 that the usefulness of cognitive evaluation theory becomes apparent. The reader can use cognitive evaluation theory to predict the effect that any extrinsic event will have on intrinsic and extrinsic motivations, as discussed more fully in Box 5. The essential question in understanding and in predicting how an external event will affect a person's motivation and behavior becomes, Why am I giving another person this external event—Is my purpose to control his behavior, or to inform his competence?

Two Examples of Controlling and Informational Events

Any external event—praise, money, grades, a scholarship, surveillance, deadlines, interpersonal competition, and so on—can be administered in a relatively controlling way or in a relatively informational way.

BOX 5



Praise

Consider how praise functions as an extrinsic event sometimes to control another's behavior and sometimes to inform her competence about a job well done (Henderlong & Lepper, 2002). A supervisor using praise, for instance, might communicate praise in an informational way, saying, "Excellent job, your productivity increased by 10%." The supervisor might, however, communicate praise in a controlling way, saying, "Excellent job, you did just as you should." Tagging phrases such as "you should," and "you ought to" onto the praise gives the feedback a tone of pressure (Ryan, 1982). In contrast, providing clear, specific, and competence-diagnosing feedback typically gives praise a highly informative function (Brophy, 1981). For example, the praise, "Excellent job, I noticed that you greeted the customer warmly and with a sincere tone in your voice," speaks informatively to an employee's sense of competence in a way that a simple "Excellent job" does not. The conclusion is that the motivational effect is not in the praise per se but in the way it is administered (Deci & Ryan, 1985b).

Competition

A second illustration of how the same external event can be administered in a relatively controlling or in a relatively informational way is interpersonal competition (Reeve & Deci, 1996). When the social context puts a good deal of pressure on winning (with its evaluative audience, coaches, peer newspaper reporters, championship trophies, career implications), competitors usually compete with a sense of contingency, pressure, and doing others' work. When experienced in such a controlling way, competition decreases intrinsic motivation because competitors care relatively little about the task itself and relatively much about the reward of winning (Deci, Schwartz, Scheinman, & Ryan, 1981; Vallerand, Gauvin, & Halliwell, 1986). The point of the competition ceases to be about the game or sport but, instead, becomes about winning. Even when people win a high-pressure competition, they still show lower intrinsic motivation (Deci et al., 1981; Reeve & Deci, 1996). However, when the social context places little emphasis on winning (recreational competition, no audience present, no trophy or scholarship for winning, an autonomy supportive coach), then competition's informational aspects (e.g., winning, improving, making progress) often become its relatively more salient aspect. Winning and making progress promote perceived competence and hence increase intrinsic motivation, while losing and the lack of progress undermine perceived competence and hence decrease intrinsic motivation (McAuley & Tammien, 1989; Reeve, Olson, & Cole, 1985). Even after a person loses in competition, intrinsic motivation can still be high if that person feels he or she performed competently (e.g., above a personal standard; Vansteenkiste & Deci, 2003). Thus, for intrinsic motivation to flourish, both competence and autonomy must be high (Fisher, 1978), and for both competence and autonomy to be high, an external event needs to be presented in both a noncontrolling and informational way.

TYPES OF EXTRINSIC MOTIVATION

As shown in Figure 5.6, three distinct types of motivation exist: amotivation, extrinsic motivation, and intrinsic motivation (Deci & Ryan, 1985b, 1991; Rigby, Deci, Patrick, & Ryan, 1992; Ryan & Deci, 2000a, 2000b). According to self-determination theory, these

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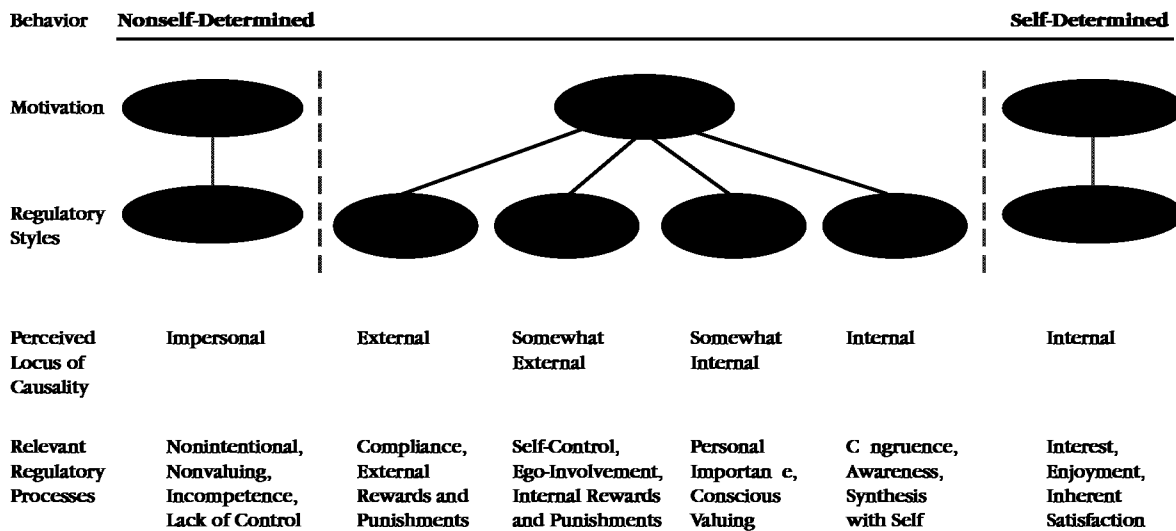


Figure 5.6 Self-Determination Continuum Showing Types of Motivation

Source: Ryan, R. M., & Deci, E. L. (2000a). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist* 55, 68–78. Copyright 2000 by American Psychological Association. Reprinted by permission.

different types of motivation can be organized along a continuum of self-determination or perceived locus of causality. On the far lefthand side is amotivation, which literally means “without motivation,” a state in which the person is neither intrinsically nor extrinsically motivated (e.g., a dropout student, disillusioned athlete, or apathetic marriage partner). In the middle of the figure are four types of extrinsic motivation, which can be distinguished from one another on the basis of their degree of autonomy: external regulation (not at all autonomous), introjected regulation (somewhat autonomous), identified regulation (mostly autonomous), and integrated regulation (fully autonomous). On the far righthand side, intrinsic motivation reflects the individual’s full endorsement of autonomy and reflects those occasions in which an activity generates spontaneous satisfactions from nurturing the person’s psychological needs. Overall, the self-determination continuum varies from amotivation or unwillingness, to passive compliance, to active personal commitment, to interest/enjoyment (Ryan & Deci, 2000a).

Identifying types of motivation is important because the amount of autonomy within any motivational state has a substantial effect on what people feel, think, and do (Gottfried, 1985; Grolnick & Ryan, 1987; Ryan & Connell, 1989; Vallerand et al., 1992). The more autonomous one’s motivation is, the more effort the person puts forth and the more they achieve (Ryan & Connell, 1989), and this is true when people try to lose weight (Williams, Grow, Freedman, Ryan, & Deci, 1996), try to recover in an alcohol-treatment program (Ryan, Plant, & O’Malley, 1995), try to experience intimacy within a relationship (Blais, Sabourin, Boucher, & Vallerand, 1990), try to adhere to exercise (Ryan et al., 1997), engage themselves in political participation (Koestner, Losier, Vallerand, & Carducci, 1996), and engage themselves in religious participation (Ryan, Rigby, & King, 1993). In each case, the type of motivation mattered, and the more autonomously endorsed it was the more positive were the person’s outcomes.

Table 5.2 Four Types of Extrinsic Motivation, Illustrated by Different Reasons of “Why I Recycle”

Type of Extrinsic Motivation	External Contingency At Stake	The reason I recycle is...	Illustrative Quotation
External Regulation	Incentives, consequences	“to get a consequence.”	“I recycle to make 5 cents on each can.”
Introjected Regulation	Avoid guilt, boost self-esteem	“because I should.”	“I recycle because I ought to, if I am going to feel good (rather than guilty) about myself.”
Identified Regulation	Valuing, sense of importance	“because it is important”	“I recycle because it is important for a cleaner environment.”
Integrated Regulation	Value congruence	“because it reflects my values.”	“I recycle because it reflects and expresses who I am and what I believe.”

Table 5.2 illustrates the four types of extrinsic motivation using the example of recycling (e.g., “Why do you recycle?”). As can be seen by the illustrative quotations, people engage in external regulation largely out of external compulsions and to gain an attractive incentive, consequence, or reward (i.e., no autonomy). People engage in introjected regulation largely out of internal compulsions and to avoid internally controlling emotions such as guilt and shame (i.e., very little autonomy). However, people who engage in activities out of identified and integrated regulation do so largely because they want to and choose to (i.e., they act autonomously). That is, people engage in identified regulation because the activity at hand is seen as important or personally useful to them (i.e., high autonomy). People engage in integrated regulation because such behaviors reflect their sense of values and a sense of who they are—their sense of self (i.e., very high autonomy).

External Regulation

External regulation is the prototype of non-self-determined extrinsic motivation. Externally regulated behaviors are performed to obtain a reward or to satisfy some external demand. For the person who is externally regulated, the presence versus absence of extrinsic motivators (e.g., rewards, threats) regulates the rise and fall of motivation. A person who is externally regulated typically has a difficult time beginning a task unless there is some external prompt to do so. A student, for instance, begins to study only when a test is coming up or begins to write a term paper only when the deadline nears. Without the test or the deadline, the student lacks the motivation necessary to study or to write. Relative to the other three types of extrinsic motivation, people who are motivated through external regulation show poor functioning and poor outcomes (Deci & Ryan, 1987; Kohn, 1993; Ryan & Connell, 1989; Ryan & Deci, 2000a).

Introjected Regulation

Introjected regulation involves taking in, but not truly accepting or self-endorsing, other people's demands to think, feel, or behave in a particular manner. Introjected regulation is essentially being motivated out of guilt and the "tyranny of the shoulds" (Horney, 1937). In essence, the person, acting as a proxy for the external environment, emotionally rewards him- or herself for performing other-defined good behavior (feel proud) and emotionally punishes him- or herself for performing other defined bad behavior (feel shamed or guilty). Therefore, partial internalization has occurred, but the internalization is kept at an arm's length, so to speak, instead of being really integrated into the self in an authentic and volitional way. The telltale sign that only partial (rather than full) internalization has occurred is because the person feels such high tension and pressure in carrying out the introjected-motivated behavior (e.g., "I just *have to* study tonight!). With introjected regulation, the person carries another person's (or society's) prescriptions inside his or her head to such an extent that he introjected voice, not the self per se, generates the motivation to act. Notice, however, that introjected regulation does include the changing of internal structures because the behavior is regulated not by explicit external contingencies but rather by internalized representations of those contingencies (i.e., a parent's voice, cultural expectations).

Identified Regulation

Identified regulation represents mostly internalized and autonomous (or self-determined) extrinsic motivation. With identified regulation, the person voluntarily accepts the merits and utility of a belief or behavior because that way of thinking or behaving is seen as personally important or useful. Thus, if a student comes to believe that extra work in mathematics is important (e.g., it has utility for a career in science) or if an athlete comes to believe that extra practice on his or her backhand is important, the motivation to study and to practice are extrinsic but freely chosen. Extra work in mathematics or in tennis is extrinsic because these behaviors are instrumental to other aims (a career as a scientist, tennis pro) yet they are freely chosen because they are perceived to be useful and valuable for one's life. Exercise and cooperation provide two additional examples of identified regulation. Many people exercise religiously and cooperate freely with others not because they enjoy jogging or sharing, but because they value what such behaviors can do for them and for their relationships with others. Because these ways of thinking and behaving are valued and deemed as personally important, people internalize/identify with them and, by internalizing them, these ways of thinking and behaving become self-determined.

Integrated Regulation

Integrated regulation constitutes the most autonomously endorsed type of extrinsic motivation. While internalization is the process of taking in a value or a way of behaving, integration is the process through which individuals fully transform their identified values and behaviors into the self (Ryan & Deci, 2000b). It is as much a developmental process as it is a type of motivation, because it involves the self-examination necessary to bring new ways of thinking, feeling, and behaving into an unconflicted congruence with the self's preexisting ways of thinking, feeling, and behaving. That is, integration occurs as

otherwise isolated identifications (e.g., “Recycling newspapers is not fun, but I want to do it anyway because it is important for the environment.”) into coherence and congruence with the existing values of the self (e.g., “I value the environment very much.”). The more the person integrates internalized ways of thinking and behaving into the larger self-system, the more his or her extrinsically motivated actions become self-determined.

Because it is the most self-determined type of extrinsic motivation, integrated regulation is associated with the most positive outcomes, such as prosocial development and psychological well-being (Ryan & Deci, 2000b). The general conclusion from empirical investigations of the self-determination theory continuum of types of motivation is that the more self-determined one’s extrinsic motivation is the better one functions, as with school achievement (Ryan & Connell, 1989) and greater psychological well-being (Sheldon & Kasser, 1995).

MOTIVATING OTHERS TO DO UNINTERESTING ACTIVITIES

People face a difficult motivational problem when they attempt to motivate others to engage in uninteresting, but worthwhile, activities. Examples of such undertakings might include parents asking their children to wash their hands before dinner, teachers asking students to complete a worksheet of difficult math problems, and workplace managers asking workers to be polite to rude customers. The first solution to such a motivational problem is, typically, to use an incentive to prompt the other person into doing whatever it is you want them to do, as with a parent saying, “If you wash your hands then you’ll get ice cream for dessert; if you don’t wash your hands then there will be no dessert.” In this case, the want of the ice cream motivates compliance, not the intrinsic appeal or the personal valuing of washing one’s hands. The problem with using expected and tangible rewards is that they yield only compliance, low-quality learning, minimal functioning (poorly washed hands), and a dependence on further external regulation.

When people use incentives, consequences, and rewards to motivate others to engage in an uninteresting activity, they hope to reframe the uninteresting activity away from something “not worth doing” into something that is suddenly “worth doing.” That is, the added external contingency creates a motivation to engage in the activity that the activity itself cannot generate (because it is so uninteresting). Recognizing that external contingencies generally promote controlling forms of extrinsic motivation associated with poor functioning and unintended side effects, researchers have explored for ways to promote autonomous types of extrinsic motivation. One way to promote identified regulation during an uninteresting activity is to offer a rationale—a verbal explanation of why putting forth effort during the otherwise uninteresting activity might actually be a useful and important thing to do (Deci, Eghrari, Patrick, & Leone, 1994; Husman & Lens, 1999; Newby, 1991; Reeve, Jang, Hardre, & Omura, 2002). Here are two illustrations:

- A parent explains to a child why raking the leaves is an important thing to do: *“Raking the leaves is important because we need to clean the yard of its leaves to make way for the Halloween trick-or-treaters tonight.”*
- A medical doctor explains why exercising is important for her patient: *“Exercising three times a week is important because it will significantly decrease your susceptibility to a heart attack.”*

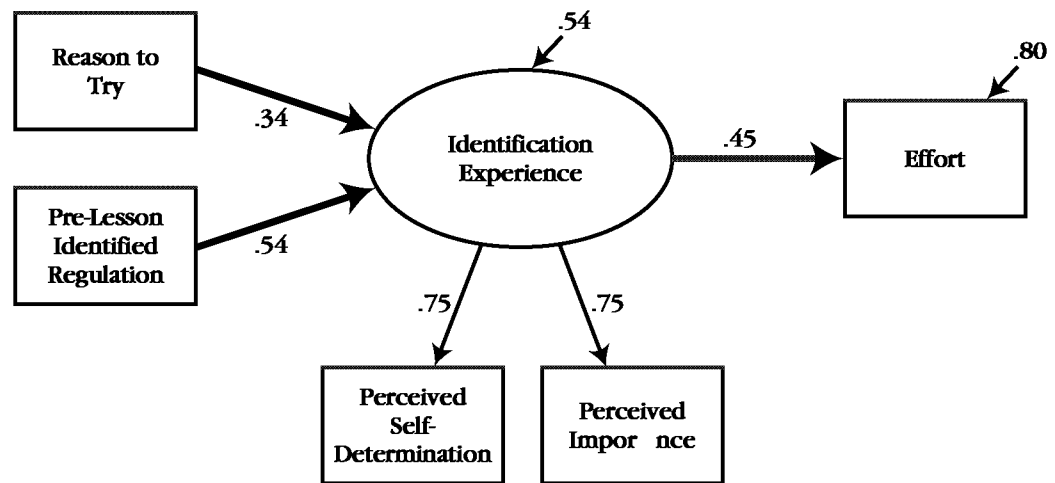


Figure 5.7 Explanatory Rationales Enhance Effort (by Cultivating an Identification Experience)

Source: From “Providing a Rationale in an Autonomy-Supportive Way as a Strategy to Motivate Others During an Uninteresting Activity,” by J. Reeve, H. Jang, P. Hardre, & M. Omura, 2002, *Motivation and Emotion*, 26, 183–207. Copyright 2002, Plenum Press.

People who hear a convincing rationale for why it is important to engage in an uninteresting activity generally put forth greater effort and engagement during that activity than do people who do not hear such an explanatory rationale (Deci et al., 1994; Reeve et al., 2002). The reason an externally provided rationale works as a motivational strategy during an uninteresting activity is because it can spark some degree of valuing, internalization, and identified regulation. Internalization occurs as the person comes to agree, “You say this activity is a useful thing to do. You might be right; this activity might indeed be useful to me.” The more fully a person transforms an externally prescribed regulation into an internally endorsed one, the more autonomous his or her extrinsic motivation will become and, hence, the greater will be his or her subsequent effort, as illustrated in Figure 5.7. As shown in the figure, giving a person an important reason to try—an explanatory rationale—helps that other “take on” (internalize) the externally provided rationale as his or her own autonomously endorsed reason to try. It is the subsequent experience of identified regulation—the desire to engage in a task not because it is interesting or fun but because it is an important thing to do—that motivates task effort.

The motivational strategy of providing a rationale applies best to those activities that truly are uninteresting things to do. But a boring task does not always have to be a boring task. While people are engaging (or asked to engage) in relatively uninteresting activities (doing homework, washing clothes, driving cross-country), people can engage in a number of strategies to foster greater interest (Jang, in press; Sansone & Smith, 2000; Sansone, Weir, Harpster, & Morgan, 1992). Some widely used “interest-enhancing strategies,” for instance, include setting a goal, embedding the activity within a fantasy context, or adding an extra source of stimulation to the task (e.g., playing music, working with a friend; Jang, in press). For instance, when an elementary-grade math teacher wanted to engage her students in a relatively boring fractions lesson, she had students work together on a computer software program that placed the fractions activity within a “Space Quest” game. While solving fractions within the Space Quest game, students set

a series of goals, worked within a fantasy context, and worked with stimulating friends. Compared to students who learned fractions in a more traditional way, these students found the lesson more interesting and they showed better learning as well (Cordova & Lepper, 1996). It was not that the fractions task became any more interesting but, instead, that the acts of pursuing a goal, placing the task within a meaningful context, and working with stimulating friends generated the sense of interest (that the task itself was unable to generate).

BUILDING INTEREST

Interest is a topic-specific motivational state that arises out of attraction to a particular domain of activity (Silvia, 2006). It enhances the attention, effort, and learning one directs toward that activity. Interest appears in two forms, as summarized in the lefthand side of Figure 5.8. *Situational interest* is triggered by appealing external events and exists as a short-term attraction to an activity. For instance, you might walk into a room and notice an object that is novel, surprising, or a particularly good fit with your personal needs and goals. With situationally aroused interest, something from the environment sparks your interest, and this short-lived interest sparks spontaneous engagement in the interesting activity (Schraw & Lehman, 2001). *Individual interest* is more stable and content-specific (Schiefele, 1999). It develops over time as an enduring personal disposition. With individual interest, the person's unique developmental history creates a clear preference to direct his or her attention and effort toward a particular activity, situation, or subject matter (e.g., music, sports, the Atlanta Braves baseball team).

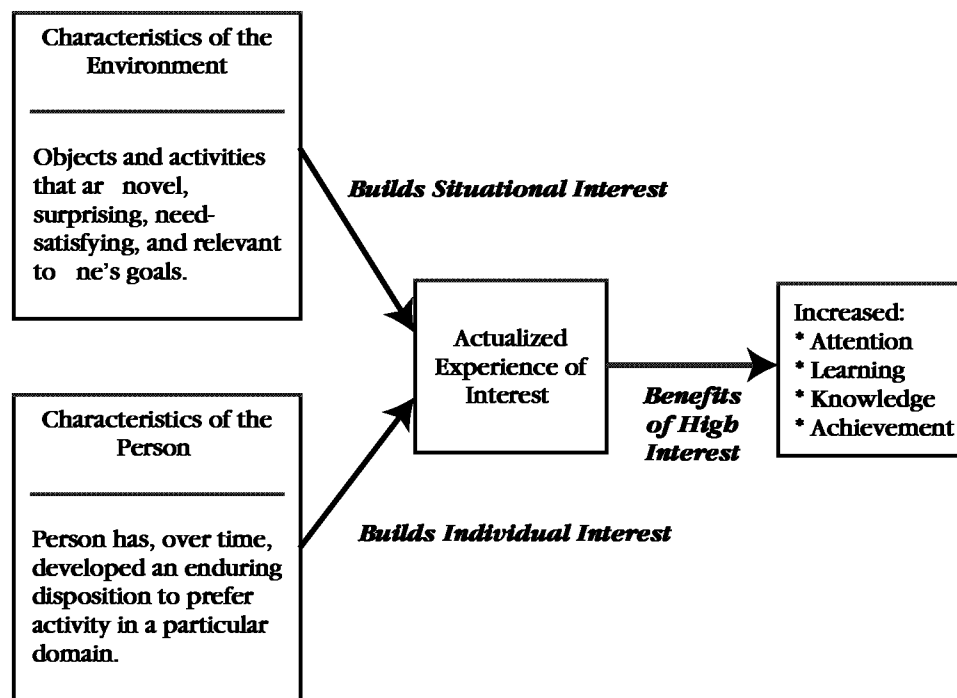


Figure 5.8 Building an Interest in a Particular Domain

Several factors explain how interest builds and grows. Typically, something about an activity first catches the person's interest, such as how novel or surprising it is (Berlyne, 1966), or how well suited the activity is to meet the person's personal goals or needs (Danner & Lonky, 1981; Deci, 1992b; Gibson, 1988; Malone, 1981). Prior knowledge in a domain is also a reliable antecedent to high interest, because interest and knowledge enhance each other. That is, the more knowledge one has about a topic, the more interesting it becomes; and the more interesting it is, the more likely one is to attend to, process, comprehend, and remember (i.e., learn) information about that topic (Alexander, Jetton, & Kulikowich, 1995; Hidi, 1990; Hidi & Baird, 1986; Silvia, 2008; Tobias, 1994). Once the person has developed an interest in a particular domain the actualized experience of high interest produces numerous benefits, such as increased attention, learning, knowledge, and achievement (Alexander, Kulikowich, & Jetton, 1994; Alexander et al., 1995; Hidi, 1990; Renninger, Hidi, & Krapp, 1992; Renninger & Wozniak, 1985; Schiefele, 1991; Schraw & Lehman, 2001; Shirey & Reynolds, 1988; Silvia, 2006, 2008).

SUMMARY

Extrinsic motivation arises from an environmentally created reason to initiate an action. External events such as money and frequent-flyer miles generate extrinsic motivation to the extent that they establish a "means to an end" contingency in the person's mind, in which the means is the behavior (going to work, flying a particular airline) and the end is some attractive consequence (money, frequent-flyer points). It is not that people develop a desire to engage in behaviors such as working or flying a particular airline; instead, people want to do whatever it is that the environment will reward them for doing.

The study of extrinsic motivation revolves around the three central concepts of incentives, consequences, and rewards. An incentive is an environmental event that attracts or repels a person toward or away from a particular course of action. Consequences involve reinforcers and punishers. A positive reinforcer (money) is any environmental event that, when presented, increases the probability of that behavior in the future. A negative reinforcer (alarm clock noise) is any environmental event that, when presented, increases the probability of that behavior in the future. A punisher (parking ticket) is any environmental event that, when presented, decreases the probability of that behavior in the future. The chief differences between incentives and consequences are (1) when each occurs and (2) how each motivates behavior. Incentives precede behavior and excite or inhibit the initiation of action; consequences follow behavior and increase or decrease the persistence of behavior. A reward is any offering from one person given to another person in exchange for his or her service or achievement; rewards sometimes produce the sought-after service or achievement but other times they do not.

While extrinsic events can have positive effects on motivation and behavior, they can also produce serious detrimental effects as captured in the phrase, "hidden costs of reward." Incentives, consequences, and rewards that are expected and tangible typically undermine motivation by decreasing autonomy, interfering with the learning process, and undermining people's development of their own autonomous self-regulation.

Cognitive evaluation theory provides a way for predicting the effects that any extrinsic event will have on motivation. The theory explains how an extrinsic event (e.g., money, grade, deadline) affects intrinsic and extrinsic motivations, as mediated by the event's effect on the psychological needs for competence and autonomy. When an extrinsic event is presented in a relatively controlling way (i.e., given to gain compliance), it increases extrinsic motivation but decreases intrinsic motivation because of its detrimental effects on autonomy. When an extrinsic event is presented

in a relatively informational way (i.e., given to communicate a message of a job well done), it increases intrinsic motivation because of its favorable effect on competence. Hence, whether an extrinsic event is motivationally constructive or destructive depends on the relative salience of its controlling and informational aspects. The art of motivating others with external events therefore becomes the effort to present incentives and rewards in ways that are both noncontrolling and information-rich.

Self-determination theory expands the distinction between intrinsic versus extrinsic motivation into a continuum of types of motivation. Four types of extrinsic motivation exist. External regulation reflects the least self-determined type of extrinsic motivation; externally regulated behaviors are performed to obtain a reward or to satisfy some external demand. In rejected regulation reflects some self-determination because the person acts as if he was carrying other peoples' rules and commands inside his head to such an extent that the intro ected voice generates self-administered rewards and punishments. Identified regulation represents mostly internalized extrinsic motivation, as the person has identified with the personal importance of an externally prescribed way of thinking or behaving and has thus accepted it as his or he own way of thinking or behaving. Integration is the most self-determined type of extrinsic motivation, and it involves the self-examination necessary to bring new ways of thinking and behaving into congruence with the preexisting ways of thinking and behaving. The four types of extrinsic motivation are important because the more self-determined is the person's extrinsic motivation (integrated regulation, identified regulation), the greater is his or her functioning in terms of performance, social development, and psychological well-being.

The chapter ends with the problems of motivating others during uninteresting activities and building greater interest in a domain of activity. To motivate others to engage in an uninteresting activity, people typically offer rewards so to reframe the uninteresting activity away from something "not worth doing" into something that is suddenly "worth doing." Because this approach promotes controlling forms of extrinsic motivation associated with poor functioning and unintended side effects, researchers have explored ways to promote more autonomous types of extrinsic motivation, such as providing rationale to explain why the uninteresting activity is important and useful enough to warrant one's volitional engagement. By promoting identified regulation, explanatory rationales enhance effort. Building interest involves first catching one's situational interest in an activity and then holding that initial interest over time by developing an individual interest in the activity. Once an interest has been developed, the actualized experience of high interest produces numerous benefits, such as increased attention, learning, knowledge, and achievement.

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Chapter 6

Psychological Needs

PSYCHOLOGICAL NEEDS

Organismic Approach to Motivation

Person–Environment Dialectic

Organismic Psychological Needs

AUTONOMY

The Conundrum of Choice

Supporting Autonomy

Autonomy-Supportive Motivating Style

Controlling Motivating Style

Nurtures Inner Motivational Resources

Relies on Informational Language

Provides Explanatory Rationales

Acknowledges and Accepts Negative Affect

Moment-to-Moment Autonomy Support

Benefits from Autonomy Support

Two Illustrations

COMPETENCE

Involving Competence

Optimal Challenge and Flow

Interdependency between Challenge and Feedback

Structure

Failure Tolerance

Supporting Competence

Positive Feedback

Pleasure of Optimal Challenge and Positive Feedback

RELATEDNESS

Involving Relatedness: Interaction with Others

Supporting Relatedness: Perception of a Social Bond

Communal and Exchange Relationships

Internalization

PUTTING IT ALL TOGETHER: SOCIAL CONTEXTS THAT SUPPORT PSYCHOLOGICAL NEEDS

Engagement

What Makes for a Good Day?

Vitality

SUMMARY

READINGS FOR FURTHER STUDY

Imagine visiting a lake for the afternoon—a lake at a campground or state park, for instance. As you lie on the shore soaking up the sun's rays, you notice a young girl playfully skipping stones across the water's surface. Before each toss, she studiously inspects piles of stones to find the flattest one. With stone in hand, she puts all her effort into the toss. Each time a rock skips according to plan, she smiles and her enthusiasm grows. Each dud brings a somber expression but also increased determination. At first, she tries only to make each stone skip once off the water's surface. After some practice and several big smiles, she moves on to develop three or four finely tuned techniques—one very long skip, short skips with many hops, and so forth. And she pretends to throw others, the big and heavy stones like hand grenades, because these splashes look like explosions in her imagination. Despite her family's fish fry currently going on, her rock skipping continues.

The child is at play. For her, an urban child, the lake is a relatively novel setting. It allows her to use her imagination in a way that is different from every day. As she plays, she feels excited and entertained. Each rock and each toss provides her with a different, surprising result. Each attempt challenges her skills and gives her an experience that is somehow deeply satisfying when her developing skill results in an improved toss. She feels competent, she feels free, she learns, and she develops skills.

Such intrinsically motivated behavior is more than frivolous play. It is integral to healthy development. The lake setting provides the child with an opportunity to learn to enjoy an activity solely for the experience, the fun, and the private sense of personal satisfaction it provides.

As with play, sports, hobbies, school, work, and travel also offer opportunities for people to engage in activities capable of involving and satisfying their psychological needs. This chapter examines the motivational significance of three psychological needs: autonomy, competence, and relatedness. The theme throughout the chapter is that when people find themselves in environments that support and nurture their psychological needs, then positive emotions, optimal experience, and healthy development follow.

PSYCHOLOGICAL NEEDS

People and animals are inherently active. As children, we push and pull things; we shake, throw, carry, explore, and ask questions about the objects that surround us. As adults, we continue to explore and to play. We play games, solve mysteries, read books, visit

friends, undertake challenges, pursue hobbies, surf the Web, build new things, and do any number of activities because these activities are inherently interesting and enjoyable things to do.

When an activity involves our psychological needs, we feel interest. When an activity satisfies our psychological needs, we feel enjoyment. So, we feel and are aware of our sense of interest and enjoyment (i.e., “I play tennis because it’s fun”), but the underlying motivational cause of engaging our environment is to involve and satisfy our psychological needs. Playing games, solving mysteries, and undertaking challenges are interesting and enjoyable things to do precisely because they provide a arena for involving and satisfying psychological needs.

Psychological needs are an important addition to our analysis of motivated behavior. Physiological needs for water, food, and so on emanate from biological deficits. This sort of need-motivated behavior is essentially reactive, in the sense that its purpose is to react against and alleviate a deficit bodily condition. Psychological needs are of a qualitatively different nature. Energy generated by psychological needs is proactive. Psychological needs promote a willingness to seek out and to engage in an environment that we expect will be able to nurture our psychological needs. Because psychological needs motivate exploration and challenge-seeking, they are understood as growth (rather than as deficit) needs.

Organismic Approach to Motivation

The three psychological needs reviewed in this chapter are sometimes referred to as organismic psychological needs (Deci & Ryan, 1991). Organismic theories get their name from the term *organism*, an entity that is alive and in active exchange with its environment (Blais, 1976). The survival of any organism depends on its environment because the environment offers resources like food, water, social support, and intellectual stimulation. And all organisms are equipped to initiate and engage in exchanges with their environment as all organisms possess skills and the motivation to exercise and develop those skills. Organismic theories of motivation acknowledge that environments constantly change and, hence, organisms need flexibility to adjust to and accommodate those changes. Organisms also need environmental resources to grow and to actualize their latent potentials. To adapt, organisms must learn to substitute a new response for a previously successful but now outdated one (because the environment changed), and organisms must grow and develop so that new skills, new interests, and new ways of adjusting emerge. The whole focus concerns how organisms initiate interactions with the environment and how organisms adapt, change, and grow as a function of those environmental transactions.

The opposite of an organismic approach is a mechanistic one. In mechanistic theories, the environment acts on the person and the person reacts. For instance, environments produce heat, and the person responds in a predictable and automatic way—by sweating. Sweating leads to water loss, and when the biological systems detect the loss, thirst arises rather automatically (i.e., mechanistically). Chapter 4 discussed these biologically rooted needs. The person and the environment relate to one another within a one-way relationship such that the environment acts and the person reacts.

Person–Environment Dialectic

Organismic theories reject such one-way portrayals (environment → person) and instead emphasize the person–environment dialectic (Deci & Ryan, 1991; Reeve, Deci, & Ryan, 2004). In dialectic, the relationship between person and environment is reciprocal (two-way); the environment acts on the person and the person acts on the environment. Both the person and the environment constantly change.

The person acts on the environment out of curiosity interest, and an intrinsic motivation to seek out and affect changes in it; the environment offers affordances (opportunities), imposes structure, makes demands, provides feedback, offers need-satisfying or need-frustrating relationships, and offers a community and cultural context as the person strives to adjust and accommodate to it (Deci & Ryan, 1985b). The outcome of the person–environment dialectic is an ever changing synthesis in which the person's needs are fulfilled (or frustrated) by the environment, and the environment produces in the person new forms of motivation. The person–environment dialectic appears in Figure 6.1.

The organismic approach to motivation begins with the assumption that the organism is inherently active. As shown in the lefthand side of Figure 6.1 (“Person”), psychological needs, interests, and integrated values are the source of that inherent activity (Deci & Ryan, 1985b). The expression of the person's inherent activity appears as the upper arrow in Figure 6.1, and in daily life looks like engagement and challenge-seeking. As shown in the righthand side of Figure 6.1 (“Environment”), the person–environment dialectic also assumes that environmental events affect the individual, as the environment offers challenges and interesting things to do, provides feedback, imposes goals, contains

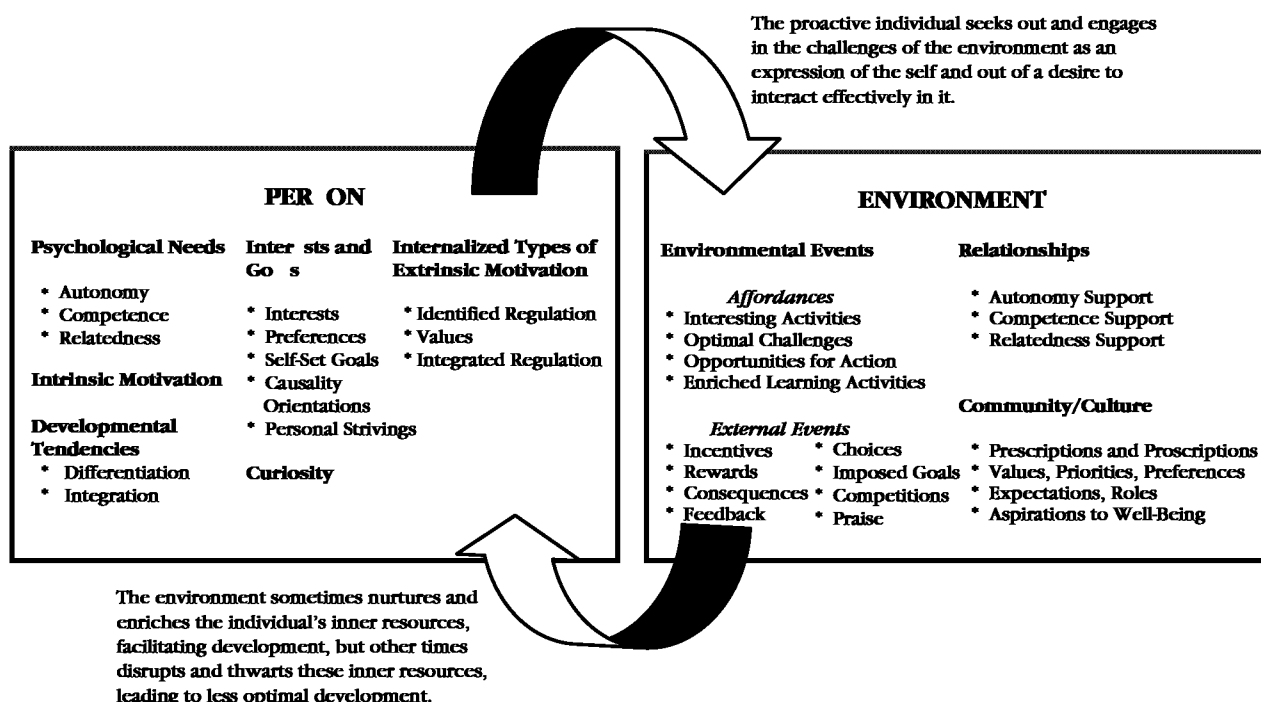


Figure 6.1 Person–Environment Dialectical Framework in Motivation Study

relationships that support (or frustrate) the psychological needs, and features a community and cultural context for the person's ongoing development. The extent of support versus neglect and frustration of the person's inner motivational resources appears as the lower arrow in Figure 6.1, and in daily life looks like opportunities, obstacles, and sources of support and frustration.

While the entries in Figure 6.1 may seem overly complex at first, the previous chapter (Chapter 5) covered many of the person's inner motivational resources (e.g., intrinsic motivation, interests, internalized types of extrinsic motivation) and many of the environmental influences on the person's motivation (e.g., affordances and external events such as incentives, consequences, and rewards). The focus in the present chapter is on the psychological needs and the relationships that support versus neglect these needs.

Organismic Psychological Needs

Consider why people want to exercise and develop their skills, such as walking, reading, swimming, driving, making friends, and hundreds of other such competencies. In part, these competencies emerge maturationally, but mostly they emerge through opportunities and affordances from the environment (Gibson, 1988; White, 1959). Organismic psychological needs provide the motivation that supports such initiative and learning (Deci & Ryan, 1985b; White, 1959). As illustrated in the chapter's opening with the young girl skipping rocks, children best illustrate how organismic psychological needs motivate the exercise and development of skills. Endlessly, young children motor about from one place to another without any apparent motivation other than just wanting to do something better than they did it the time before (because of the need for competence). Furthermore, children desire to experiment with the world on their own terms as they want to decide for themselves what to do, how to do it, when to do it, and whether to do it at all (because of the need for autonomy). And which activities, skills, and values children regard as important depends on the attitudes, values, and emotional climates offered to them by the important people in their lives (because of the need for relatedness).

Collectively, the organismic psychological needs of autonomy, competence, and relatedness provide people with a natural motivation for learning, growing, and developing. Whether they experience such learning, growing, and healthy development depends on whether the environments support or frustrate the expression of these needs.

AUTONOMY

When deciding what to do, we desire choice and decision-making flexibility. We want to be the one who decides what to do, when to do it, how to do it, when to stop doing it, and whether or not to do it at all. We want to decide for ourselves how to spend our time. We want to be the one who determines our actions, rather than have some other person or some environmental constraint force us into a particular course of action. We want our behavior connected to, rather than divorced from, our interests, preferences, wants, and desires. And we want our behavior to arise out of and express our preferences and desires. We want the freedom to construct our own goals, we want the freedom to decide what is important and what is and is not worth our time. In other words, we have a need for autonomy.

Autonomy is the psychological need to experience self-direction and personal endorsement in the initiation and regulation of one's behavior (Deci & Ryan, 1985b). Behavior is autonomous (or self-determined) when our interests, preferences, and wants guide our decision-making process to engage or not to engage in a particular activity. We are not self-determining (i.e., our behaviors are determined by others) when some outside force takes our sense of choice away and, instead, pressures us to think, feel, or behave in particular ways (Deci, 1980).

Three experiential qualities work together to define the subjective experience of autonomy—an internal perceived locus of causality, volition, and perceived choice—as shown in Figure 6.2.

Perceived locus of causality (PLOC) refers to an individual's understanding of the causal source of his or her motivated actions (Heider, 1958). PLOC exists within a bipolar continuum that ranges from internal to external. This continuum reflects the individual's perception that his or her behavior is initiated by a personal (internal PLOC) or by an environmental (external PLOC) source. For instance, why read a book? If the reason why you read is some motivational agent within the self (interest, value), then you read out of an internal PLOC. However, if the reason why you read is some motivational agent in the environment (upcoming test, the boss), then you read out of an external PLOC. Some prefer to use the terms "origins" and "pawns" to communicate the distinction between a person whose behavior emanates from an internal versus an external PLOC (deCharms, 1968, 1976, 1984; Ryan & Grolnick, 1986). Origins "originate" their own intentional behavior. "Pawn," a metaphor taken from the game of chess, captures the experience we feel when powerful people push us around in much the same way that employers boss around their workers, military sergeants command privates, and parents order their children to behave.

Volition is an unpressured willingness to engage in an activity (Deci, Ryan, & Williams, 1995). It centers on how free versus coerced people feel while they are doing what they want to do (e.g., playing, studying, talking), and also how free versus coerced they feel while avoiding what they do not want to do (e.g., not smoking, not eating, not apologizing). Volition is high when the person engages in an activity and feels free and feels that one's actions are endorsed fully by the self—saying, essentially, "I freely want to do this" (Deci & Ryan, 1987; Ryan, Koestner, & Deci, 1991). The opposite

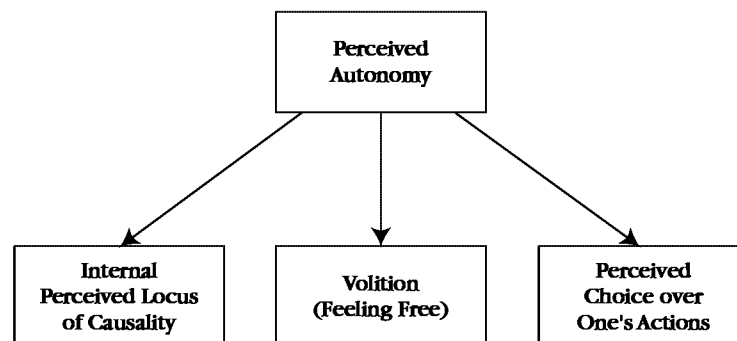


Figure 6.2 Three Subjective Qualities within the Experience of Autonomy

of volition and feeling free is feeling pressured and coerced into action. In addition to being pressured by the environment, people sometimes create within themselves a pressure-fueled motivation to force themselves into action—saying, essentially, “I *have* to do this” (Ryan, 1982; Ryan et al., 1991; Ryan, Mims, & Koestner, 1983).

Perceived choice refers to that sense of choice we experience when we find ourselves in environments that provide us with decision-making flexibility that affords us many opportunities from which to choose. The opposite of perceived choice is that sense of obligation we experience when we find ourselves in environments that rigidly and inflexibly push us toward a prescribed course of action. For instance, when children are given choices within their schoolwork (Cordova & Lepper 1996), when nursing-home residents are given decision-making power in how to schedule their daily activities (Langer & Rodin, 1976), and when patients communicate with flexible (not authoritarian) doctors (Williams & Deci, 1996), the children, residents, and patients all feel that their behavior flows from a sense of choice.

The Conundrum of Choice

Providing a person with a choice may be the most obvious and widely used way to support a person’s need for autonomy (Flowerday & Schraw, 2000). There is a difference, however, between the environmental event of being offered a choice and the personal experience of true choice. Understanding this difference is an excellent way to understand the nature of the psychological need for autonomy.

Providing choices does generally enhance people’s sense of autonomy and intrinsic motivation (Zuckerman, Porac, Lathin, Smith, & Deci, 1978). However, not all choices are the same and not all choices promote autonomy (Patall, Cooper, & Robinson, 2008; Reeve, Nix, & Hamm, 2003; Williams, 1998). Hence, the conundrum—does the provision of choice nurture autonomy and intrinsic motivation, or does it not? A choice among options offered by others fails to tap into and involve the need for autonomy (e.g., “Do you want to listen to country music or to classical music?”; Overskeid & Svartdal, 1996; Schraw, Flowerday, & Reisetter, 1996). For instance, offering people a choice between working on a crossword puzzle or working on an essay activity resulted in no boost in autonomy, engagement, or performance (Flowerday & Schraw, 2003). Likewise, offering students a choice of topics to write about yielded no benefit in terms of later autonomy or performance (Flowerday, Schraw, & Stevens, 2004). In these “either–or” choice offerings, the person is told to make a choice and is even somewhat forced or pressured to make a choice (Moller, Deci, & Ryan, 2006). In contrast, it is only when people have a true choice over their actions (e.g., “Do you even want to listen to music?”) and when they are offered choices that are meaningful to their lives do they experience a sense of autonomy (Cordova & Lepper, 1996; Reeve et al., 2003; Williams, 1998). When people are offered unrestricted choices with no strings attached and when people are allowed to make choices that truly reflect their personal values, goals, and interests, then they do feel a sense of need-satisfying autonomy. Such an experience of autonomy, in turn, leads to positive post-choice functioning in terms of enhanced intrinsic motivation, effort, creativity, preference for challenge, and performance (Moller et al., 2006; Patall et al., 2008).

Supporting Autonomy

External events, environments, social contexts, and relationships all vary in how much versus how little they support a person's need for autonomy. Some environments involve and nurture our need for autonomy, while others neglect and frustrate this need (recall Figure 6.1). For instance, when the environment imposes a deadline, it interferes with autonomy, but when it provides opportunities for self-direction, it supports autonomy. Relationships, too, can sometimes support and other times thwart our need for autonomy, as when a coach bosses athletes around (undermining their autonomy) or when a teacher listens carefully to her students and uses that information to give students opportunities to work in their own way and at their own pace (supporting their autonomy). Social contexts and cultures in general also vary in how much versus how little they support people's autonomy, as is illustrated when the military commands its personnel versus when day care providers go out of their way to support children's interests and initiatives. When environments, relationships, social contexts, and cultures successfully involve and satisfy people's need for autonomy, these environments are referred to as autonomy supportive, in contrast, when environments relationships, social contexts, and cultures neglect, frustrate, and interfere with people's need for autonomy, these environments are referred to as controlling (Deci & Ryan, 1987). Table 6.1 provides the definition, enabling conditions, and interpersonal behaviors associated with both autonomy support and control.

Autonomy-Supportive Motivation Style

What makes any approach to motivating others an autonomy-supportive one (i.e., its enabling conditions) is one person's willingness to take the other's perspective and to

Table 6.1 Definition, Enabling Conditions, and Interpersonal Behaviors Associated with Autonomy Support and Control

Autonomy Support	Control
Definition Interpersonal sentiment and behavior to identify, nurture, and develop another's inner motivational resources.	Definition Interpersonal sentiment and behavior to pressure another toward compliance with a prescribed way of thinking, feeling, or behaving.
Enabling Condition Takes the other person's perspective. Values personal growth opportunities	Enabling Condition Pressures the other person toward a prescribed outcome. Targets a prescribed outcome
Instructional Behaviors Nurtures inner motivational resources Relies on flexible language Provides explanatory rationales Acknowledges and accepts expressions of negative affect	Instructional Behaviors Relies on outer sources of motivation Relies on pressuring language Neglects explanatory rationales Asserts power to silence negative affect and to resolve conflict

value personal growth opportunities during an activity. By taking the other person's perspective and by valuing personal growth opportunities, the first person becomes both more willing and more likely to create environmental conditions in which the other person's autonomous motivation can potentially initiate and regulate his or her activity. The lower part of Table 6.1 lists the central interpersonal behaviors that constitute autonomy support—namely, nurturing inner motivational resources, relying on flexible language, providing explanatory rationales, and acknowledging and accepting the other's expressions of negative affect.

Controlling Motivating Style

What makes any approach to motivating others a controlling one (i.e., its enabling conditions) is that one person pressures the other toward a prescribed outcome and uses social influence techniques to achieve that targeted socialization outcome. When one person (e.g., teacher, coach, parent, manager, counselor) pressures another toward a specific outcome, they do so by making salient a prescribed outcome and using social influence techniques to such an extent that controlling (rather than autonomous) motivation initiates and regulates students' classroom activity. Being *very* controlling (e.g., drill instructors, Division I basketball coaches, authoritarian parents) further adds interpersonal behavior to suppress and even deaden students' inner motivational resources (so to enhance the relationship between controlled motivation and compliant behavior; see Ricks, 1997). The lower part of Table 6.1 lists the central interpersonal behaviors that constitute behavioral and emotional control—namely, relying on outer sources of motivation, relying on pressuring language, neglecting to provide explanatory rationales, and reacting to students' expressions of negative affect with authoritarian power assertions.

As shown in Box 6, a person's motivating style toward others can be understood along a continuum that ranges from highly controlling to highly autonomy supportive (Deci, Schwartz, et al., 1981; Reeve, Bolt, & Cai, 1999). Just how people go about creating and establishing autonomy-supportive environments for others involves four essential ways of relating to others (Assor, Kaplan, & Roth, 2002; Deci, 1995; Koestner et al., 1984; McCombs & Pope, 1994; Reeve, 1996, 2006; Reeve, Deci, & Ryan, 2004; Reeve, Wang, Carrell, Jeon, & Barch, 2004; Ryan & Deci, 2000b), as discussed below.

Nurturing Inner Motivational Resources

People with an autonomy-supportive motivating style motivate others by nurturing their inner motivational resources, whereas people with a controlling style motivate others by using outer motivational resources. When autonomy-supportive, one person seeks to encourage initiative in the other by identifying and nurturing their interests, preferences, and psychological needs. In a school setting, for instance, an autonomy-supportive teacher will coordinate the day's lesson plan with students' expressed interests, preferences, sense of challenge, and competencies. When controlling, one person seeks to create an external compulsion to act in the other by introducing incentives, consequences, rewards, directives, deadlines, commands, or threats of punishment. A controlling teacher, for instance, will bypass students' inner motivational resources and instead rely on extrinsic motivators such as directives to gain the students' pawn-like compliance.

BOX 6

Relies on Informational Language

At times the people we try to motivate are listless, other times they perform poorly, and at other times, they behave inappropriately. People with an autonomy-supportive motivating style treat listlessness, poor performance, and inappropriate behavior as motivational problems to be solved rather than as targets for criticism (Deci, Connell, & Ryan, 1989). They rely on flexible, noncontrolling, and informational language that helps the other person diagnose and solve the motivational problem. For example, a coach might say

to her athlete, “I’ve noticed that your scoring average has declined lately; do you know why this might be?” In contrast, people with a controlling style use a pressuring, rigid, “no-nonsense,” and guilt-inducing communication style that says that the other person should, must, ought to, or has to do a certain thing (e.g., “Johnny, you *should* try harder” or “You *must* finish that project”). More specifically, those with a controlling style try to motivate others by inducing feelings of guilt, shame, and anxiety for not performing a requested activity (Barber, 1996), by threatening to withdraw their approval (Assor, Roth, & Deci, 2004), by threatening self-esteem beliefs (Ryan, 1982), by cultivating perfectionist standards (Soenens, Vansteenkiste, Duriez, Luyten, & Goossens, 2005), and by offering “conditional regard” more generally (Assor et al., 2004). What all these communications have in common is that they promote the person’s tendency to introject a pressuring type of self-imposed control to comply with another’s perspective on what is a “right” way of thinking, feeling, or behaving.

Provides Explanatory Rationales

In trying to motivate others, we sometimes ask them to engage in tasks that are relatively uninteresting things to do. For instance parents ask children to clean their rooms, teachers ask students to follow the rules, coaches ask athletes to run laps around the track, and doctors ask patients to take their medicine in a timely fashion. To motivate others on uninteresting tasks, people with an autonomy-supportive style communicate the value, worth, meaning, utility, or importance of engaging in these sorts of behaviors, as in “It is important that you follow the rules because we need to respect the rights of everyone in the class; by following the rules, you are respecting others” (Koestner et al., 1984). Promoting valuing means using a “because” phrase to explain why the uninteresting activity is worth the other’s time and effort. People with controlling styles, however, do not take the time to explain the use or importance in engaging in these sorts of activities, saying things like, “Just get it done” or “Do it because I told you to.” The logic in communicating a rationale is that the person who hears it is more likely to internalize and voluntarily accept the externally imposed rules, constraints, or limits. Once internalized (“Yeah, flossing is a pain, but it keeps plaque off my teeth and that’s a worthwhile thing to do”), people put forth voluntary effort in even uninteresting (but important) activities (Reeve et al., 2002).

Acknowledges and Accepts Negative Affect

Sometimes the people we try to motivate show little motivation and express negative affect about having to engage in tasks that they do not find to be interesting. They sometimes show “attitude,” sometimes utter criticisms, and other times display a resistance to having to do things like cleaning their rooms, following rules, running laps, and being nice. People with an autonomy-supportive style listen carefully to these expressions of negative affect and resistance and accept them as valid reactions to being asked to engage in an activity that seems, to them, uninteresting and not worthwhile. Essentially, autonomy-supportive individuals say “okay,” and then work collaboratively with the other person to solve the underlying cause of the negative affect and resistance. People with controlling styles make it clear that such expressions of negative affect and resistance are unacceptable, saying things like, “My way or the highway,” “Shape up,” and “Quit

Table 6.2 What Autonomy-Supportive and Controlling People Say and Do to Motivate Others

What Autonomy-Supportive People Say and Do	What Controlling People Say and Do
* Listen carefully	* Hold/Hog learning materials
* Allow others time to talk	* Show correct answers
* Provide rationale	* Tell correct answers
* Encourage effort	* Speak directives, commands
* Praise progress, mastery	* Should, must, have to statements
* Ask others what they want to do	* Ask controlling questions
* Respond to questions	* Seem demanding
* Acknowledge the others' perspective	

your complaining and just get the work done, or else ” Instead of working collaboratively with the unmotivated others, those with controlling motivating styles try to change the other person's negative affect into something more socially acceptable and compliant.

Moment-to-Moment Autonomy Support

The four characteristics listed above illustrate a general autonomy-supportive motivating style. In addition, when people create autonomy-supportive environments for others, they typically do so by exhibiting characteristic moment-to-moment behaviors. Consider, for instance, specific interactions such as teachers motivating students during a particular lesson (Reeve & Jang, 2006) or a doctor trying to motivate a patient during a 10-minute office visit (Halvari & Halvari, 2006). Several studies have used a teacher–student paradigm in which they first assessed whether the teacher has an autonomy-supportive or controlling style and then asked the teacher to teach the student during an instructional episode. The researchers observed how each teacher tried to motivate the student. As shown in Table 6.2, the lefthand column shows what autonomy-supportive teachers characteristically say and do when they try to motivate students, while the righthand column shows what controlling teachers characteristically say and do when they try to motivate students (based on Deci, Spiegel, Ryan, Koestner, & Kauffman, 1982; Reeve et al., 1999; Reeve & Jang, 2006).

When taken as a whole, the behaviors listed above reveal a motivating style associated with promoting high autonomy in others: listen carefully, share learning materials, create opportunities for others to talk and to work in their own ways, communicate rationale for uninteresting endeavors, ask others what they want to do, respond to questions, offer hints when the other is stuck, encourage effort, praise progress and improvement, and acknowledge the other person's perspective.

Benefits from Autonomy Support

The motivating styles teachers, parents, coaches, therapists, doctors, and workplace managers use have strong implications for the subsequent motivation, engagement, development, learning, performance, and psychological well-being of the students, children, athletes, clients, patients, and employees they try to motivate. These benefits are shown in Figure 6.3. As shown in the *motivation* column, autonomy support nurtures not only

Motivation	Engagement	Development	Learning	Performance	Psychological Well-Being
Autonomy	Engagement	Self-Worth	Conceptual Understanding	Grades	Psychological Well-Being
Competence	Positive Emotion	Creativity	Deep Processing	Task Performance	Vitality
Relatedness	Less Negative Emotion	Preference for Optimal Challenge	Active Information Processing	Standardized Test Scores	School/Life satisfaction
Intrinsic Motivation	Class Attendance		Self-Regulation Strategies		
Mastery Motivation and Perceived Control	Persistence				
Curiosity	School Retention vs. Dropping Out				
Internalized Values					

Figure 6.3 Benefits from Autonomy Support

the psychological need of autonomy (Reeve & Jang, 2006), but the needs for competence (Ryan & Grolnick, 1986) and relatedness (Baard, Deci, & Ryan, 2004) as well as additional motivations such as intrinsic motivation (Reeve et al., 2003) and mastery motivation (Deci, Schwartz et al., 1981). Autonomy support also enhances various aspects of *engagement*, such as higher effort (Reeve et al., 2004) and more positive emotion (Patrick, Skinner, & Connell, 1993). Furthermore, as shown in columns 3–6 in Figure 6.3, autonomy support enhances important aspects of *development* (e.g., higher self-worth, Ryan & Grolnick, 1986; pleasure from optimal challenge, Harter, 1978b), *learning* (e.g., enhanced conceptual understanding, Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005; more active information processing, Grolnick & Ryan, 1987), *performance* (e.g., higher grades and standardized test scores, deCharms, 1976), and *psychological well-being* (e.g., greater vitality, Nix, Ryan, Manly, & Deci, 1999; psychological well-being, Deci et al., 2001).

The positive outcomes that arise in response to having one's autonomy supported occur because autonomy support, and autonomy-supportive relationships in general, provide people with the “psychological nutrients” they need to satisfy their psychological needs (Ryan, 1995, p. 410). These experiences of psychological need satisfaction energize the person's inherent growth potentials introduced in Figure 6.1 in ways that promote healthy motivation, strong engagement, growth-oriented development, meaningful learning, enhanced performance, and psychological well-being (Ryan & Deci, 2000b).

Two Illustrations

Consider one study whose purpose was to predict which high school students would and would not drop out of school (Vallerand, Fortier, & Guay, 1997). Students reported the extent to which they felt autonomy support versus control from their parents, teachers, and

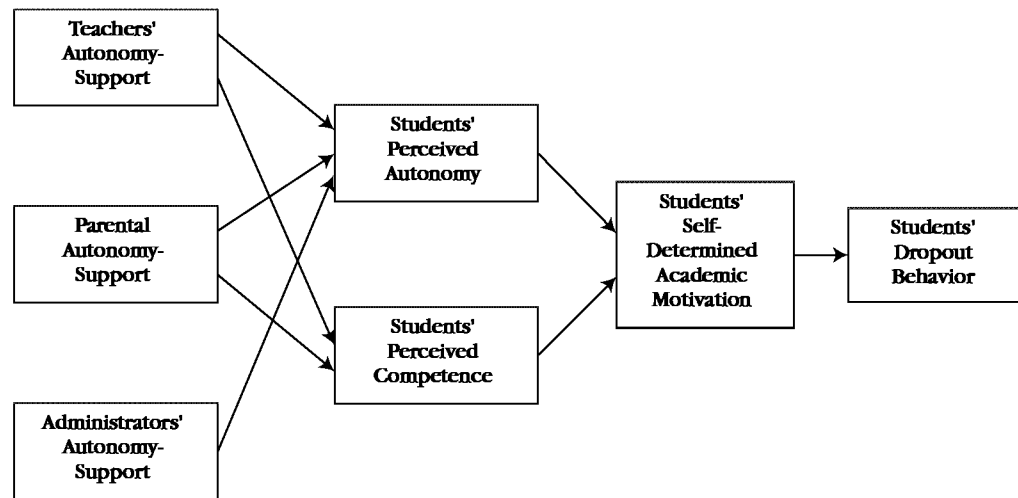


Figure 6.4 Motivational Model of High-School Dropouts

Source: Adapted from *Self-Determination and Persistence in a Real-Life Setting: Toward a Motivational Model of High School Dropout*, by R. J. Vallerand, M. S. Fortier, and F. Guay, 1997, *Journal of Personality and Social Psychology*, 72, 1161–1172. Copyright 1997 by American Psychological Association. Adapted with permission.

school administrators. How autonomy-supportive versus controlling a social world each high school student lived in was then used to predict how much or how little perceived autonomy and perceived competence each student felt while in school. As shown in Figure 6.4, how autonomous (and how competent) the student felt toward school then predicted the quality of their academic motivation (autonomous vs. controlled), which predicted whether each student actually dropped out or not.

In a second study, researchers asked schoolchildren to paint while the teacher acted in either an autonomy-supportive or controlling way. In both conditions, teachers imposed a list of constraints (rules) children needed to follow during the painting, including instructions to not mix the paints, to clean off the brushes before switching to a new color of paint, and to paint only on a particular piece of paper (Koestner et al., 1984). Some children painted under these conditions imposed on them by a controlling teacher. This teacher used controlling, pressuring language that told children to follow the rules. Other children painted under autonomy-supportive conditions. This teacher used informational language that communicated the rationale for each rule so the children could understand why the constraints were important and worth following. After all the children painted, the researchers measured the quality of their motivation and scored their artwork on various dimensions, and these results appear in Table 6.3. Children who painted under autonomy-supportive conditions enjoyed the painting more, were more intrinsically motivated to paint (see “free-choice behavior”), and produced artwork that was creative, technically good, and of high quality.

COMPETENCE

Everyone wants and strives to be competent. Everyone desires to interact effectively with their surroundings, and this desire extends into all aspects of our lives—in school, at

Table 6.3 Children's Motivational Benefits from Autonomy-Supportive (Rather Than Controlling) Rules

Dependent Measure		Rules Communicated in a Controlling Way	Rules Communicated in a Autonomy-Supportive Way
Enjoyment	M (SD)	4.87 (0.99)	5.57 (0.65)
Free Choice Behavior	M (SD)	107.7 (166.0)	257.1 (212.6)
Creativity	M (SD)	4.80 (1.16)	5.34 (1.17)
Technical Goodness	M (SD)	4.88 (0.87)	5.90 (1.28)
Quality	M (SD)	4.84 (0.68)	5.62 (1.06)

Notes. M = Mean, SD = Standard Deviation; Free choice = Intrinsically motivated behavior; All mean differences are significantly different, $p < .05$.

Source: Adapted from *Setting Limits on Children's Behavior: The Differential Effects of Controlling Versus Informational Styles on Intrinsic Motivation and Creativity*, by R. Koestner, R. M. Ryan, F. Bernieri, and K. Holt (1984). *Journal of Personality*, 52, 233–248.

work, in relationships, and during recreation and sports. We all want to develop skills and improve our capacities, talents, and potential. When we find ourselves face-to-face with a challenge, we give the moment our full attention. When given the chance to grow our skills and talents, we all want to make progress. When we do so, we feel satisfied, even happy. In other words, we have a need for competence.

Competence is the psychological need to be effective in interactions with the environment, and it reflects the desire to exercise one's capacities and skills and, in doing so, to seek out and master optimal challenges (Deci & Ryan, 1985b). The need for competence generates the willingness to seek out optimal challenges, and when we engage in a task with a level of difficulty and complexity that is precisely right for our current skills and talent, we feel strong interest. When we make progress on developing our skills, we feel a strong need-satisfying sort of satisfaction.

Involving Competence

The situations we find ourselves in can involve and satisfy our need for competence, or they can neglect and frustrate this need. The key environmental conditions that involve our need for competence are optimal challenge, clear and helpful structure, and high failure tolerance from others, and the key environmental condition that satisfies our need for competence is positive feedback and the perception of progress.

Optimal Challenge and Flow

To determine the conditions that create enjoyment, Mihaly Csikszentmihalyi (1975, 1982, 1990) interviewed and studied hundreds of people he presumed knew what it felt like to

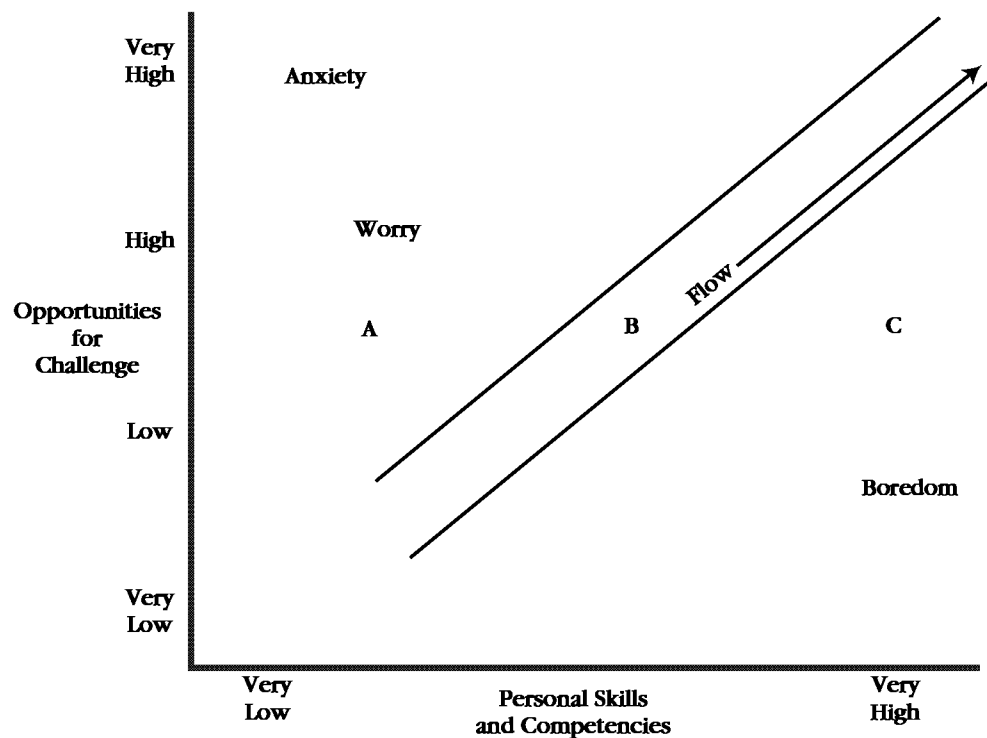


Figure 6.5 Flow Model

Source: Adapted from *Beyond Boredom and Anxiety: The Experience of Flow in Work and Play*, by M. Csikszentmihalyi, 1975, San Francisco: Jossey-Bass.

have fun: rock climbers, dancers, chess champions, basketball players, surgeons, and others. Later, he studied more representative samples, including working professionals, high school students, assembly-line workers, groups of older adults, and people who generally sat at home and watched television. Irrespective of which sample he studied, Csikszentmihalyi found the essence of enjoyment could be traced to the “flow experience.”

Flow is a state of concentration that involves a holistic absorption and deep involvement in an activity (Keller & Bless, 2008). Flow is such a pleasurable experience that the person often repeats the activity with the hope of experiencing flow again and again (Csikszentmihalyi & Nakamura, 1989). It occurs whenever a person uses his or her skills to overcome some challenge. The relationship between task challenge and personal skill appears in Figure 6.5. The figure identifies the emotional consequences that arise from the different pairings of challenge and skill. When challenge outweighs skill (skill is low, challenge is high), performers worry that the demands of the task will overwhelm their skills. Being overchallenged threatens competence, and that threat manifests itself emotionally as worry (if moderately overchallenged) or anxiety (if highly overchallenged). When challenge matches skill (challenge and skill are both at least moderately high), concentration, involvement, and enjoyment rise. If challenges and skills are perfectly matched, the experience is one of flow. When skill outweighs challenge (skill is high, challenge is low), task engagement is characterized by reduced concentration, minimal task involvement, and emotional boredom. Being underchallenged neglects competence, and that neglect manifests itself emotionally as indifference or boredom.

Being overchallenged or overskilled produces emotional problems and suboptimal experience, but the worst profile of experience actually emanates from the pairing of low challenge and low skill (the lower lefthand corner of Figure 6.5). With both challenge and skill low, literally all measures of emotion, motivation, and cognition are at their lowest levels—the person simply does not care about the task (Csikszentmihalyi, Rathunde, & Whalen, 1993). Flow is therefore a bit more complicated than just the balance of challenge and skill because balancing low skill and low challenge produces apathy. A more accurate description of how challenge relates to skill is that flow emerges in those situations in which both challenge and skill are moderately high or high (Csikszentmihalyi & Csikszentmihalyi, 1988; Keller & Bless, 2008). With this qualification in mind, another way to look at Figure 6.5 is to divide it into four quadrants in which the upper-left quadrant represents conditions for worry and anxiety, the lower-left quadrant represents conditions for apathy, the lower-right quadrant represents conditions for boredom, and the upper-right quadrant represents conditions for flow.

The hypothetical case of three individuals, A, B, and C, also appears in Figure 6.4, as each individual performs a moderately difficult, moderately complex task. A, B, and C differ only in their levels of personal skill brought to the task. Given a moderately difficult task, unskilled person A will worry because his skills cannot match the demands and challenges of the task, somewhat skilled person B will experience flow because his skills equally match with the demands and challenges of the task, and highly skilled person C will be bored because his skills exceed the demands and challenges of the task. To alleviate worry, person A has two options: decrease task difficulty or increase personal skill. To alleviate boredom, person C has two options: increase task difficulty or decrease personal skill (through self-handicapping, for instance). To alter the challenge, persons A and C can manipulate task difficulty by solving easier or harder math problems, choosing an easier or harder jigsaw puzzle, or selecting a more or less proficient partner in an athletic contest. Persons A and C might also change the rules of the task by, for instance, solving the jigsaw puzzle with a partner or within a time limit, or allowing the baseball hitter additional or fewer strikes. As to manipulating skills, persons A and C can practice to increase skills, or they can impose handicaps to effectively decrease skills, such as running a race with ankle weights or playing left-handed if one normally plays right-handed. People engage in these sort of strategies—increase or decrease task difficulty and increase or decrease personal skill—according to flow theory, because they want their task participation to involve and satisfy their need for competence.

For a concrete example, consider three friends on a snow-skiing outing. Ski slopes offer different difficulty levels such that some slopes are relatively flat (beginner slopes), some are fairly steep (intermediate slopes), and others are downright death-defying (advanced slopes). If the skiers have different levels of skill, Figure 6.5 predicts that the emotional experience will vary for each skier on each slope. The novice skier will enjoy the beginner slopes but will experience mostly worry on the intermediate slopes and serious anxiety on the advanced slopes. Because the novice's skill level is so low, she might ski all day and experience only a hint of flow. The average skier will enjoy the intermediate slopes but will experience mostly boredom on the beginner slopes and worry on the advanced slopes. The professional will most likely enjoy the advanced slopes but will experience mostly mind-numbing boredom on the beginner slopes and some boredom on the intermediate slopes. Each skier, however, can experience flow on

each slope by intentionally adjusting level of personal skill or level of slope difficulty. For example, a skier might increase skill by taking lessons or decrease skill by handicapping (i.e., using only one ski, using shorter skis, skiing backward); the skier might increase slope difficulty by confronting moguls or decrease slope difficulty by going at a very slow speed. The fact that people can adjust both level of skill and level of task difficulty means that people can establish the conditions for optimal challenge and, hence, create the conditions under which they can involve the need for competence and experience flow.

The most important practical implication of flow theory is the following: Given optimal challenge, *any* activity can be enjoyed. Doing electrical work, writing papers, debating issues, sewing, analyzing a play, mowing the lawn and other such activities do not necessarily make the top of most people's list of must-do activities, but the balance of skill with challenge adds the spice of flow—concentration, absorption, enjoyment, and optimal experience. Consistent with the idea that optimal challenge gives rise to flow, Csikszentmihalyi found in a pair of studies that students actually (though surprisingly) enjoyed doing their homework and working their part-time jobs more than they enjoyed viewing (challengeless) television programs (Csikszentmihalyi et al., 1993). Furthermore, people more frequently experience enjoyment at (challenging) work than they do during (unchallenging) leisure (Csikszentmihalyi 1982).

Generally speaking, people want optimal challenges that will involve (rather than neglect or overwhelm) the need for competence and set up the conditions for flow. But people are motivationally complex, and sometimes people actually enjoy being overchallenged (Stein, Kimiecik, Daniels, & Jackson, 1995). With very high challenge, people sometimes see in a task a potential for gain, growth, and personal improvement. The perception of improvement and progress can be enjoyable, at least until the hope for gain gives way to the reality of being overwhelmed. Under other conditions, people sometimes enjoy very low levels of challenge (Stein et al., 1995). Generally speaking, people enjoy feedback that confirms they have a skill level that is above and beyond the challenge of the task. Easy success can generate some level of enjoyment, especially in the early stages of task engagement when performers harbor the most doubts as to how their performances will go. The quality of enjoyment that easy success breeds, however, is a defensive and relief-based type of enjoyment. This type of enjoyment might keep anxiety at bay, but it does little to nurture the psychological need for competence. Instead, it is success in the context of optimal challenge that involves and nurtures the need for competence and therefore generates sincere, need-satisfying enjoyment (Clifford, 1990).

Interdependency between Challenge and Feedback

Everyone is challenged every day. In school, teachers put examinations in front of students. At work, projects and assignments test a person's writing, creativity, and teamwork skills. On the drive home, the interstate challenges both our patience and our driving skills. If the car breaks down, our automotive repair skills will be put to the test. In the gym, the proficiency of an opponent or the weight of a barbell challenges athletic skills. These situations set the stage for challenge. But setting the stage for challenge is not the same thing as creating the psychological experience of being challenged. One additional ingredient still needs to be tossed into the equation—performance feedback. Confronting a test, project, or contest invites challenge, but a person does not *experience* challenge until he or she begins to perform and receive the first glimpse of feedback.

It is at that point—facing a challenge and receiving initial performance feedback—that people report the psychological experience of being challenged (Reeve & Deci, 1996). Professional musicians and athletes often echo this insight when they report that their preperformance feelings of anxiety turn immediately into feelings of challenge with “the first pitch” or “the first keystroke on the piano.”

Structure

Structure is the amount and clarity of information about what the environment expects the person to do to achieve desired outcomes. The provision of a highly structured environment nurtures the need for competence when it offers clear goals and guidance (Hokoda & Fincham, 1995; Nolen-Hoeksema, Wolfson, Mumme, & Guskin, 1995) and consistent, sensitive, and responsive feedback (Hokoda & Fincham, 1995; Skinner, 1986) as people exercise their skills to meet challenges, solve problems, and make progress (Hollembek & Amorose, 2005; Ntoumanis, 2005; Taylor & Ntoumanis, 2007). Overall, what people who are providing structure to involve the other’s psychological need for competence are doing is providing (1) information about the pathways to desired outcomes and (2) support and guidance for pursuing these pathways (Connell & Wellborn, 1991; Skinner, 1991, 1995; Skinner, Zimmer-Gembeck, & Connell, 1998).

Failure Tolerance

The problem with optimal challenge and highly structured environments, motivationally speaking, is that when people face moderately difficult and skill-testing tasks, they are as likely to experience failure and frustration as they are to experience success and enjoyment. In fact, one hallmark of optimal challenge is that success and failure are equally likely. Thus, the dread of failure can squash the competence need-involving qualities of optimal challenge. If intense, the dread of failure can motivate avoidance behaviors so that people go out of their way to escape from being challenged (Covington, 1984a, 1984b).

Before people will engage freely in optimally challenging tasks, the social context must tolerate (and even value) failure and error making (i.e., adopt a performance climate rich in “failure tolerance” or “error tolerance”; Clifford, 1988, 1990). Optimal challenge implies that considerable error making is essential for optimizing motivation (Clifford, 1990). Error tolerance, failure tolerance, and risk taking rest on the belief that we learn more from failure than we do from success. Failure produces opportunities for learning because it has its constructive aspects when people identify its causes, try new strategies, seek advice and instruction, and so on (Clifford, 1984). This helps explain why people prefer to seek out optimal challenges (rather than easy successes), feel greater competence, and experience an emotional green light toward stretching oneself when they are in autonomy-supportive and failure-tolerant, rather than in controlling and failure-intolerant, environments (Clifford, 1990; Deci, Schwartz, et al., 1981).

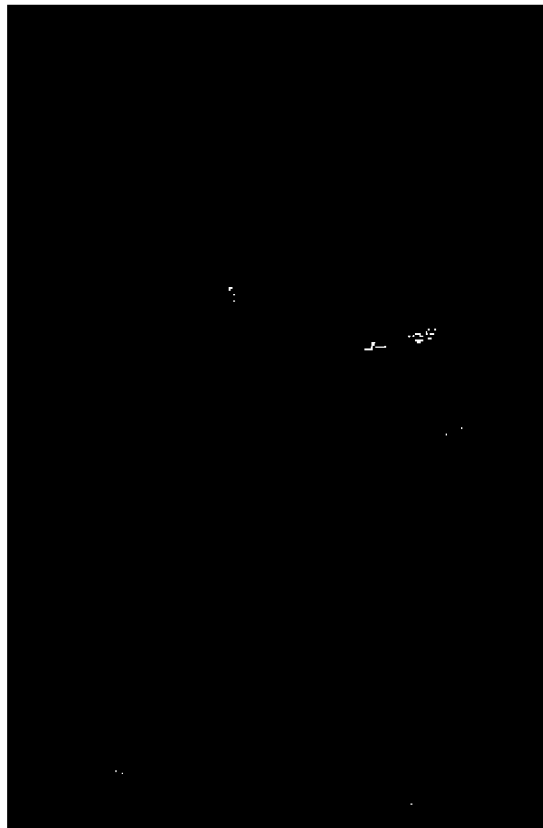
Supporting Competence

Supporting competence is largely a function of offering informational feedback when people make progress and creating opportunities for people to enjoy the pleasure of optimal challenge.

Positive Feedback

Whether individuals perceive their performance to be competent or incompetent is often an ambiguous undertaking. To make such an evaluation, a performer needs feedback. Feedback comes from one (or more) of the following four sources (from Boggiano & Ruble, 1979; Dollinger & Thelen, 1978; Grolnick, Frodi, & Bridges, 1984; Koestner et al., 1987; Reeve & Deci, 1996; Schunk & Hanson, 1989):

- Task itself
- Comparisons of one's current performance with one's own past performances
- Comparisons of one's current performance with the performance of others
- Evaluations of others



In some tasks, competence feedback is inherent in the performance of the task itself, as in successfully logging onto a computer (or not), repairing a machine (or not), or throwing a strike or a ball (in baseball). In most tasks, however, performance evaluation is more ambiguous than a right-versus-wrong performance outcome. In performing social skills, artistic talents, or other such tasks, our own past performances, peer performances, and the evaluations of other people (rather than the task itself) supply the information necessary to make an inference of competence versus incompetence. As for our own past performances, the perception of progress is an important signal of competence (Schunk & Hanson, 1989), just as the perception of a lack of progress signals incompetence. As

to the performance of our peers, doing better than others signals competence whereas doing worse than others signals incompetence (Harackiewicz, 1979; Reeve & Deci, 1996; Reeve et al., 1985). As for the evaluation of other people, praise and positive feedback bolsters perceptions of competence, whereas criticism and negative feedback deflates it (Anderson et al., 1976; Blank et al., 1984; Deci, 1971; Dollinger & Thelen, 1978; Vallerand & Reid, 1984).

In summary, performance feedback in its various forms—task-generated, self-generated, social comparisons, and other-generated—supplies the information individuals need to formulate a cognitive evaluation of their perceived level of competence. When these sources of information converge on an interpretation of a job well done, we experience positive feedback that is capable of satisfying the psychological need for competence.

Pleasure of Optimal Challenge and Positive Feedback

To confirm that people do indeed derive pleasure from optimal challenge, Susan Harter (1974, 1978b) gave school-age children anagrams of different difficulty levels and monitored each child's expressed pleasure (through smiling) upon solving each anagram. (An anagram is a word or phrase such as *table*, with its letters rearranged to form another word or phrase, as in *bleat*.) In general, anagram-solving success produced greater smiling and higher enjoyment than did failure (Harter, 1974), suggesting that mastery in general gratifies the competence need. In addition, however, some anagrams were very easy (three letters), some were easy (four letters), others were moderately difficult (five letters), and still others were very hard (six letters). As the anagrams increased in difficulty, it took the children longer and longer to solve them, as expected, but the critical measure in the study was how much the children smiled after solving the anagrams of different levels of difficulty (Harter 1978b). A curvilinear inverted-U pattern emerged in which children rarely smiled after solving the easy and very easy problems, they smiled most following success on the moderately difficult problems, and they smiled only modestly following success on the very hard problems. The central point is that children experience the greatest pleasure following success in the context of moderate challenge. In the words of the children, "The fives were just right; they were a challenge, but not too much challenge" and "I liked the hard ones because they gave you a sense of satisfaction, but the really hard ones were just too frustrating" (Harter, 1978b, p. 796).

RELATEDNESS

Everyone needs to belong. Everyone desires social interaction. Everyone wants friends. We all go out of our way to form and maintain warm, close, affectionate relationships with others. We all want others to understand us for who we are as individuals, and we want others to accept and to value us. We want others to acknowledge us and to be responsive to our needs. We want relationships with others who really and honestly care for our well-being. We want our relationships to be reciprocal; as we want to form not only close, responsive, and caring relationships but we also want the other person to want to form these same sorts of relationships with us. This desire for relationships with individuals extends to relationships with groups, organizations, and communities too. In other words, we have a need for relatedness.

Relatedness is the psychological need to establish close emotional bonds and attachments with other people, and it reflects the desire to be emotionally connected to and interpersonally involved in warm relationships (Baumeister & Leary, 1995; Fromm, 1956; Guisinger & Blatt, 1994; Ryan, 1991; Ryan & Powelson, 1991; Sullivan, 1953). Because we need relatedness, we gravitate toward people who we trust to care for our well-being, and we drift away from those who we do not trust to look out for our well-being. What people are essentially looking for within need-satisfying relationships is the opportunity to relate the self authentically to another person in a caring and emotionally meaningful way (Ryan, 1993). Relatedness is an important motivational construct because people function better, are more resilient to stress, and report fewer psychological difficulties when their interpersonal relationships support their need for relatedness (Cohen, Sherrod, & Clark, 1986; Lepore, 1992; Osterman, 2000; Ryan Stiller, & Lynch, 1994; Sarason et al., 1991; Windle, 1992).

Because we need relatedness, social bonds form easily (Baumeister & Leary, 1995). Given an opportunity to engage others in face-to-face interaction, people generally go out of their way to create relationships (Brewer, 1979). The emergence of friendships and alliances seems to require little more than proximity and spending time together (Wilder & Thompson, 1980). The more people interact and the more people spend time together, the more likely they are to form friendships. Once social bonds are formed, people are generally reluctant to break them. When we move, when we graduate from school, and when others take their leave of us, we resist the breakup of the relationship. We promise to write and to telephone, we cry, we exchange addresses and phone numbers, and we plan a future occasion to get back together.

Involving Relatedness: Interaction with Others

Interaction with others is the primary condition that involves the relatedness need, at least to the extent that those interactions promise the possibility of warmth, care, and mutual concern. Starting a new relationship seems to be an especially easy way to involve the need for relatedness. Consider, for instance, the relatedness-involving potential of the following events, each of which promises an entry into new social relationships: first dates, falling in love, childbirth, fraternity or sorority pledging, and starting anew in school or in employment. Generally speaking, people seek emotionally positive interactions and interaction partners, and in doing so they gain the opportunity to involve the psychological need for relatedness.

Supporting Relatedness: Perception of a Social Bond

Although interaction with others is sufficient for involving the relatedness need, relatedness-need satisfaction requires the creation of a social bond between the self and another (or between the self and the group). To be satisfying, that social bond needs to be characterized by the perceptions that the other person (1) cares about my welfare and (2) likes me (Baumeister & Leary, 1995). But more than caring and liking, the relationships that deeply satisfy the need for relatedness are those steeped in the knowledge that one's "true self"—one's "authentic self"—has been shown and deemed to be important in the eyes of another person (Deci & Ryan, 1995; Rogers, 1969; Ryan, 1993).



Relationships that do not involve caring, liking, accepting, and valuing do not satisfy the need for relatedness. People who are lonely, for instance, do not lack frequent social contact. They interact with others as frequently as do nonlonely people. Rather, those who feel lonely lack close intimate relationships (Wheeler, Reis, & Nezlek, 1983). When it comes to relatedness and relationships, quality is more important than quantity (Carstensen, 1993).

Marriages, which are clearly close relationships, are not always emotionally satisfying. Some marriages, though full of social interaction, are full of conflict, stress, and criticism and basically make the other person's life more difficult than it otherwise would be. Alternatively, supportive marriages, those rich in mutual care and liking, are the emotionally satisfying relationships that lead people to feel happy (Coyne & DeLongis, 1986). Furthermore, youths' relationships with their parents follow the same pattern in that to keep youths' depression at bay, parent–youth relationships not only need to exist, but they also need to be supportive (Carnelley, Pietromonaco, & Jaffe, 1994). Having one's relatedness need satisfied, as opposed to neglected or thwarted, promotes vitality and well-being (Ryan & Lynch, 1989), and it lessens loneliness and depression (Pierce, Sarason, & Sarason, 1991; Windle, 1992). Emotions such as sadness, depression, jealousy, and loneliness exist as telltale signs of a life lived in the absence of intimate, high-quality, relatedness-satisfying relationships and social bonds (Baumeister & Leary, 1995; Williams & Solano, 1983).

Communal and Exchange Relationships

We involve ourselves in many relationships, some of which are more need satisfying than are others. The distinction between communal and exchange relationships captures the essence of relationships that do (communal) and do not (exchange) satisfy the relatedness need (Mills & Clark, 1982).

Exchange relationships are those between acquaintances or between people who do business together. Communal relationships are those between persons who care about the welfare of the other, as exemplified by friendships, family, and romantic relationships. What distinguishes exchange from communal relationships are the implicit rules that guide the giving and receiving of benefits, such as money, help, and emotional support (Clark, Mills, & Powell, 1986). In exchange relationships, no obligation exists between interactants to be concerned with the other person's needs or welfare. As they say in the movie *The Godfather*, "It's business." (Incidentally, an "It's business" attitude toward a relationship helps explain or justify why people can act in neglectful or uncaring ways.) In communal relationships, both parties care for the needs of the other, and both feel an obligation to support the other's welfare. Only communal relationships satisfy the relatedness need.

In communal relationships, people monitor and keep track of the other's needs, regardless of any forthcoming opportunities for reciprocity or material gain (Clark, 1984; Clark & Mills, 1979; Clark et al., 1986; Clark, Ouellette, Powell, & Milberg, 1987). For instance, people involved in communal (as compared to exchange) relationships frequently check up on the needs of the other (Clark et al., 1986), resist keeping track (or score) of individual inputs into joint projects (Clark, 1984), provide help when the other feels distressed (Clark et al., 1987), and experience tangible economic gifts as *detrimental* to how friendly, relaxed and satisfying forthcoming interactions are likely to be (Clark & Mills, 1979). On this latter point, consider the emotional discomfort you might feel after providing a ride home to a close (communal) friend and, upon arrival, were handed \$10 for the favor (Mills & Clark, 1982). In communal relationships, what people want and need is relatedness need satisfaction, not a \$10 bill.

Internalization

Internalization refers to the process through which an individual transforms a formerly externally prescribed regulation or value into an internally endorsed one (Ryan et al., 1993). For instance, a person might internalize the value of education or internalize the utility of brushing one's teeth (see Chapter 5). As a process, internalization reflects the individual's tendency to voluntarily adopt and integrate into the self the values and regulations of other people (or society).

Relatedness to others provides the social context in which internalization occurs (Goodenow, 1993; Grolnick, Deci, & Ryan, 1997; Ryan & Powelson, 1991). When a person feels emotionally connected to and interpersonally involved with another, he or she believes the other person is truly looking out for his or her welfare, relatedness is high, and internalization occurs willingly. When a person feels emotionally distant from and interpersonally neglected by another, relatedness is low and internalization rarely occurs. For instance, children who have a positive relationship with their parents will generally internalize their parents' ways of thinking and behaving. Children with stormy or nonexistent relationships with their parents will generally reject their parents' ways of thinking and behaving and search for a value system elsewhere.

High relatedness does not guarantee that internalization will occur. For internalization to occur, the individual must also see the value, meaning, and utility in the other's prescriptions ("do X, believe Y") and proscriptions ("don't do X, don't believe Y"). To

internalize a value or to internalize a way of behaving, the person needs to understand why the value or way of acting has merit, as in “Why is it important that I brush my teeth?” Therefore, relatedness is a necessary (but not sufficient) condition for internalization and cultural transmission to occur. Internalization flourishes in relationships that provide a rich supply of (1) relatedness need satisfaction and (2) clear and convincing rationale for why the others’ prescriptions and proscriptions will benefit the self.

PUTTING IT ALL TOGETHER: SOCIAL CONTEXTS THAT SUPPORT PSYCHOLOGICAL NEEDS

Specific aspects of the social context are noteworthy in their capacity to involve and satisfy the psychological needs. For illustration, Table 6.4 summarizes the prototypical events that involve the needs of autonomy, competence, and relatedness as well as the prototypical events that satisfy these three needs. When involved in activities that offer opportunities for self-direction, optimal challenge, and frequent social interaction, people typically experience need involvement and feel interested in what they do. When involved in activities that offer autonomy support, positive feedback, and communal relationships, people typically experience need satisfaction and feel enjoyment in what they do.

Engagement

The motivational model of engagement (see Figure 6.6) illustrates in a comprehensive way the contribution that relationships and social contexts have for psychological needs (Connell, 1990; Connell & Wellborn, 1991; Skinner & Belmont, 1993). Engagement is a term that captures the intensity and emotional quality people show when they initiate and carry out activities, such as learning in school or practicing skills in music or sports (Fredricks et al., 2004). When highly engaged, people show behavioral engagement (on-task attention, effort, persistence), emotional engagement (interest, enjoyment), cognitive engagement (preference for challenge, self-regulation of what they are doing), and voice (expressions of one’s preferences and interests).

Jim Connell and Ellen Skinner explain the conditions under which people show high and low engagement by tracing the origin of engagement to the three psychological needs. Specifically, they argue that (1) autonomy support enhances engagement because it involves and satisfies the need for autonomy, (2) structure enhances engagement because it involves and satisfies the need for competence, and (3) involvement enhances engagement because it involves and satisfies the need for relatedness. How autonomy support, structure, and involvement are expressed during social interactions

Table 6.4 Environmental Factors that Involve and Satisfy the Psychological Needs

Psychological Need	Environmental Condition that Involves the Need	Environmental Condition that Satisfies the Need
Autonomy	Opportunities for self-direction	Autonomy support
Competence	Optimal challenge	Positive feedback
Relatedness	Social interaction	Communal relationships

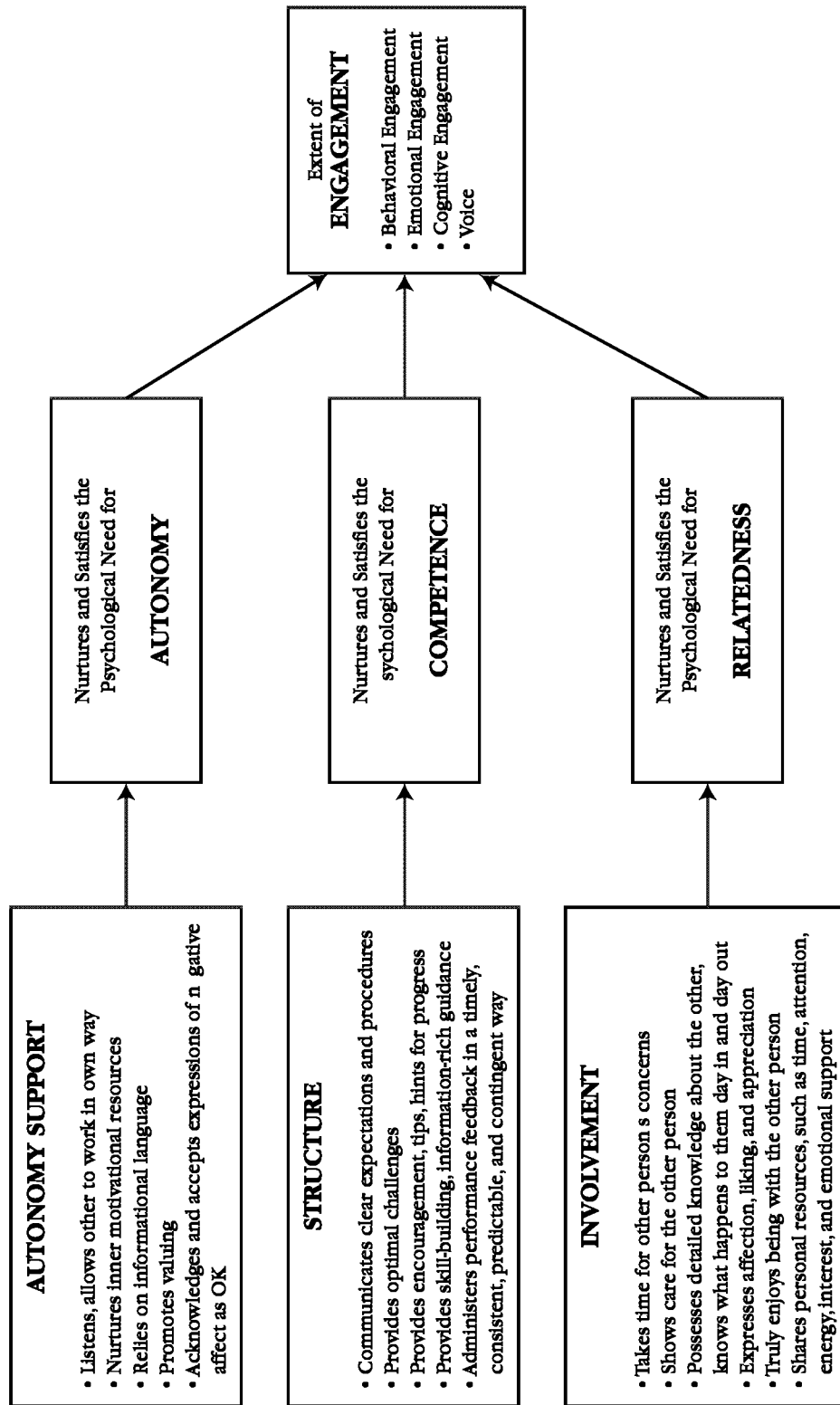


Figure 6.6 Engagement Model to Illustrate the Motivational Significance of Autonomy Support, Structure, and Involvement

(in school, in the home, at work, during athletic practice, on the job site) appear in some detail on the lefthand side of Figure 6.6. It is within these aspects of a supportive environment (or relationship) that people richly experience engagement-fostering psychological need satisfaction.

What Makes for a Good Day?

Experiences that involve and satisfy psychological needs generate positive emotion and psychological well-being (Reis, Sheldon, Gabel, Roscoe, & Ryan, 2000; Ryan & Deci, 2001). Simply put, on our good days, the events in our lives work to involve and satisfy our psychological needs. On our bad days, the events in our lives work to neglect and frustrate these needs. So psychological need satisfaction predicts and explains when we do and do not have a “good day.”

To study day-to-day fluctuations in well-being one group of researchers asked college students to keep a daily diary of their moods (joyful, angry) and well-being (vitality, physical symptomatology). The researchers predicted that good days are those in which one’s psychological needs are met (Kasser & Ryan, 1993, 1996; Sheldon, Elliot, Kim, & Kasser, 2001; Sheldon, Ryan, & Reis, 1996). Circumstances partly dictated when people had their good days, as people had their best days on weekends, for instance. But people also had their best days when they experienced higher levels of daily competence and daily autonomy. (Unfortunately, the researchers did not include a measure of daily relatedness.) For instance as people spent their days attending classes, talking with friends, and playing the cell, the more effective they felt (daily competence) and the more internal was their perceived locus of causality (daily autonomy) during these activities, the greater was their positive affect and vitality and the lesser was their physical symptomatology like a headache.

These findings are especially important because they confirm that psychological needs provide the *psychological nutrients* necessary for good days and positive well-being (Sheldon et al., 1996). Consider an ordinary trip to the gym to exercise. Imagine at the end of the workout that you completed a questionnaire asking how enjoyable the hour was, why you came to exercise, how challenging the workout was and how much you improved, and what was the quality of the social interaction during the hour. Notice that these questions correspond to the psychological needs for autonomy, competence, and relatedness. In the study, the greater the exercisers reported experiencing autonomy, competence, and relatedness, the greater was the exerciser’s enjoyment (Ryan et al., 1997). In contrast, people who exercised for other motives (appearance, body image) enjoyed the experience less and worked out for a briefer time. A study with older adults in nursing homes found much the same result in that the more self-determining and interpersonally related residents felt each day, the greater was their vitality and well-being and the less was their distress (Kasser & Ryan, 1999).

If you will recall from the chapter’s opening vignette in which the young girl was skipping stones across the surface of the lake, then the point is worth repeating that she was doing more than merely playing. She was also engaging in the sort of daily activity that provides her with the psychological nutrients she needs to promote her development and well-being. The same can be said for us as we play musical instruments, read books,

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and hang out with our friends to experience our needed daily dosage of autonomy, competence, and relatedness.

Vitality

One way people experience a good day is through a subjective experience of vitality. For instance, consider the following three sentences (Ryan & Frederick, 1997):

- I feel alive and vital.
- Sometimes I feel so alive I just want to burst.
- I feel energized.

When people have days that allow them to feel autonomous, competent, and interpersonally related, they are significantly more likely to agree with these statements (Kasser & Ryan, 1993, 1996; Sheldon et al., 1996). Psychological need involvement and satisfaction offers us the psychological nutrients we need to feel vital and well. Such a spark of vitality is a rather clear signal that psychological needs function as growth, rather than as deficit, needs.

SUMMARY

The study of the three psychological needs of autonomy, competence, and relatedness relies on an organismic approach to motivation, an approach to motivation that makes two core assumptions. First, people are inherently active. Second, in the person–environment dialectic, the person uses inherent psychological needs to engage in the environment and the environment sometimes supports but other times neglects and frustrates these inner resources. The picture that emerges in an organismic approach to motivation is that human beings possess a natural motivation to learn, grow, and develop in a way that is healthy and mature, and they do so when environments involve and support their psychological needs.

Autonomy is the need to experience self-direction and personal endorsement in the initiation and regulation of one's behavior, and it reflects the desire to have inner resources, rather than environmental events, determine one's actions. When self-determined, behavior emanates from an internal perceived locus of causality, feels free, and flows out of a sense of choice over one's actions. The extent to which an individual is able to involve and satisfy his or her need for autonomy depends a good deal on how supportive versus neglecting and frustrating (i.e., controlling) his or her relationships and environment are perceived to be. An autonomy-supportive motivating style is one that nurtures inner motivational resources, relies on informational language, promotes valuing, and acknowledges and accepts expressions of negative affect as okay. People whose behavior is autonomous, as opposed to controlled by others, show positive outcomes, including gains in motivation, engagement, development, learning, performance, and psychological well-being.

Competence is the need to interact effectively with the environment. It reflects the desire to exercise one's capacities and skills and, in doing so, to seek out and master optimal challenges. The need for competence generates the motivation to want to develop, improve upon, and refine personal skills and talents. The principal environmental events that involve the competence need are optimal challenge, high structure, and high failure tolerance. When personal challenge and environmental skill are both relatively high, people experience flow, which is a psychological state characterized by maximal enjoyment, intense concentration, and full absorption in the task. The principal environmental events that satisfy the competence need are positive feedback and the

perception of progress. The more environments satisfy people's need for competence, the more willing people are to seek out and try to master optimal challenges that allow them opportunities to develop and grow.

Relatedness is the need to establish close emotional bonds and attachments with other people, and it reflects the desire to be emotionally connected to and interpersonally involved with others in warm, caring relationships. Mere interaction with others is a sufficient condition for involving the need for relatedness. To satisfy relatedness, however, a person needs to confirm that the emerging social bonds with other people involve both caring and liking. A communal relationship represents the type of relationship capable of satisfying the relatedness need. Relatedness to others is important because it provides the social context that supports internalization, which is the process through which one person takes in and accepts as his or her own another person's belief, value, or way of behaving.

An engagement model of motivation (Figure 6.6) illustrates how relationships and social contexts successfully involve and satisfy (or neglect and frustrate) the psychological needs for autonomy, competence, and relatedness. Collectively, autonomy support, structure, and involvement are important aspects of the social context because they provide the means through which environments support people's psychological needs. When people experience psychological need satisfaction, they experience the psychological nutrients (psychological needs) necessary for active engagement, having "a good day," and subjective experiences of vitality and well-being.

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Chapter 7

Social Needs

ACQUIRED NEEDS

- Quasi-Needs
- Social Needs
- How Social Needs Motivate Behavior

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- Origins of the Need for Achievement
 - Socialization Influences
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- Conditions That Involve the Affiliation and Intimacy Needs
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POWER**Conditions That Involve and Satisfy the Need for Power****Leadership and Relationships****Aggressiveness****Influential Occupations****Prestige Possessions****Power and Goal Pursuit****Leadership Motive Pattern****Effectiveness of U.S. Presidents****SUMMARY****READINGS FOR FURTHER STUDY**

Imagine driving down the interstate for hours and hours. The monotony grows and grows. To defend against the monotony, your mind and imagination begin to wander. Glancing at the passing countryside, you see houses and farms. Horses run outside one farm, and you imagine what it would be like to race in the Kentucky Derby. You imagine going neck and neck with the best jockeys in the world. Of course, you win and the crowd goes wild. Having conquered the racing world, your thoughts turn to the examination you took before leaving town. You blew it, and that subpar performance gnaws at you, pressing you to figure out ways to improve. Next time, you will budget your time more efficiently. Hopeful in your plan, you dream of the days when you will graduate and become a physician. You think about working in the laboratory, making important scientific advancements, and perhaps discovering the cure for Alzheimer's disease. Yours will be a grand career.

The driving and monotony continue. A song on the radio reminds you that your friends are now 600 miles behind. You feel the loss, and the sense of separation reminds you of the trivial argument with your partner just before you left. You imagine all the things that you could do to make things right again—make a telephone call, send an apologetic e-mail, or, better yet, turn the car around and surprise your partner with an impromptu visit. As you pass a high school, you remember how comfortable it was to hang out with your friends. It was the best of times, and you smile and laugh. Your laughing draws the attention of a passerby, and for a moment, you wonder what it would be like to get to know her and learn about her life and her interests. What does she do? Where is she going? Who is she?

Still, the driving continues. A car zooms by at 90 miles per hour. For some reason, you feel that the other driver has somehow made you look bad, as he drives so fast and you so slow. And the way the driver darted in front of you seemed unnecessarily aggressive, in a posturing sort of way. Offended, you feel an impulse to yell at him and flash your bright lights in his rearview mirror. To restrain yourself, you mutter some tough-sounding name-calling, turn up your shirt collar, and put on your sunglasses to look cool. Your thoughts wander to what it would be like to drive down the road in a convertible and to have people see you talking on a cell phone. Maybe you could drive one of those high-sitting, all-terrain, superpowered vehicles. You like the thought of being rich and respected by others.

Fantasies of winning a race, doing well in competition, becoming a better student, and accomplishing something unique like curing Alzheimer's disease are achievement-related thoughts. Thoughts of separation and goals to make amends for a broken relationship, be with close friends, and establish new friendships are affiliation- and intimacy-related thoughts. Impulses of assertiveness and concerns over status and reputation arise from power-related thoughts. Generally, as the mind wanders, our needs have a way of working their way into consciousness to affect our thoughts, emotions, and desires. The thoughts that freely pop into one's mind tell the story of which social needs are particularly important to that person.

ACQUIRED NEEDS

This chapter discusses two categories of acquired psychological needs: social needs and quasi-needs. None of us is born with a need for achievement, a need for power, a need for money, a need for a high grade point average, or a need for a new car that will impress our friends. Yet each of us develops many such strivings, at least to a degree. Personal experience, socialization opportunities and demands, and our unique developmental history teach us to expect a more positive emotional experience in some situations than in other situations. Experience also teaches us to expect positive emotional experiences in some particular domains of life (e.g., opportunities for achievement, affiliation, intimacy, power), and the anticipation of such leads us to organize our lifestyle around further activity in these domains rather than in other domains. Over time, because of these repeating emotional experiences, we acquire preferences for those particular situations, hobbies, and careers that involve and satisfy the social need or needs we acquire and value. Some of us learn to prefer and enjoy situations that challenge us with explicit standards of excellence (i.e., achievement needs). Others learn to prefer and enjoy situations that afford relationship opportunities (i.e., affiliation and intimacy needs). Still others learn to prefer and enjoy situations that allow them to exert influence over others (i.e., power needs).

People harbor a multitude of needs, including physiological, psychological, social, and quasi-needs. What is common among the needs discussed in this chapter—the social and quasi-needs—is that they have social (rather than innate) origins. Social needs originate from preferences gained through experience, socialization, and development. These needs come to exist within us as acquired individual differences—as an acquired or learned part of our personality. Quasi-needs are more ephemeral, and include situationally induced wants, such as an immediate need for money, a need for self-esteem when rejected, or a need for an umbrella when it rains.

To keep the different types of needs separate from one another, Table 7.1 summarizes the definitions for each type. Recall from Chapter 4 that the general definition of need is: “A need is any condition within the person that is essential and necessary for life, growth, and well-being. When needs are nurtured and satisfied, we live, grow, and thrive; when needs are neglected and thwarted, we are damaged, regress, and suffer.”

The emphasis in this chapter is on those social needs that function as personality characteristics: achievement, affiliation, intimacy, and power. This chapter traces the social origins of each of these needs and discusses how each need, once acquired, manifests itself in thought, emotion, action, and lifestyle. The analysis of the four social needs of

Table 7.1 Four Types of Needs and Their Definitions

Type of Need	Definition, with Examples
Physiological	A biological condition within the organism orchestrating brain structures, hormones, and major organs to regulate and correct bodily imbalances that are essential and necessary for life, growth, and well-being. Examples include thirst, hunger, and sex.
Psychological	An innate psychological process that underlies the proactive desire to seek out interactions with the environment to promote growth and well-being. Examples include autonomy, competence, and relatedness.
Social	An acquired psychological process that grows out of one's socialization history that activates emotional responses to a particular need-relevant incentive. Examples include achievement, affiliation, intimacy, and power.
Quasi	Ephemeral, situationally induced wants that create tense energy to engage in behavior capable of reducing the built up tension. Examples include needing money at the store, a Band-Aid after a cut, and an umbrella in the rain.

achievement, affiliation, intimacy, and power constitutes the bulk of the chapter, though quasi-needs are an important addition to our ongoing motivational analysis of behavior. Besides those discussed here, other researchers argue for the importance of additional social needs, including the need for cognition (Cacioppo, Petty, Feinstein, & Jarvis, 1996), the need for closure (Webster & Kruglanski, 1994), and the need for structure (Neuberg & Newsom, 1993).

Quasi-Needs

Quasi-needs are situationally induced wants and desires that are not actually full-blown needs in the same sense that physiological, psychological, and social needs are. Quasi-needs are so called because they resemble true needs in some ways. For instance, they affect how we think, feel, and act (i.e., affect cognition, emotion, and behavior). A set of quasi-needs that commonly gains the attention of college students is that for money, a secure job, and a career plan that is capable of gaining the approval of one's parents. Day-to-day circumstances remind us of our needs for money, job, and approval, and events such as shopping, job interviewing, and a visit home keep these situationally induced wants in the forefront of our attention. And these quasi-needs, more often than not, have a sense of urgency about them that can, at times, dominate consciousness and perhaps overwhelm and displace other needs.

Quasi-needs originate from situational demands and pressures. Whenever a person satisfies a situational demand or pressure, the quasi-need fades away. When a bill arrives in the mail, we need money; after being rejected, we need self-esteem; upon seeing a store item on sale, we need to possess it; as we age into our late 20s, we need to get married; and so on. Once we get the money, self-esteem, possession, or marriage, however, the situation is such that we no longer need more money, self-esteem, possessions, or marriage proposals. (Some situational pressures, such as a need for money or relief from back pain, however, can recur on a chronic basis.) The fact that quasi-needs disappear once we get what we want, however, is the telltale sign that the need is not a full-blown

need. It is not a condition that is essential and necessary for life, growth, and well-being (the definition of a need). Rather, it is something we introject from the environment for a time and something that has more to do with the pressures in the environment than it does the needs of the individual. The proof in this distinction is that any change to the environment leads to a corresponding change in our quasi-need (i.e., if it stops raining, our need for an umbrella fades).

Quasi-needs originate from situational events that promote a psychological sense of tension, pressure, and urgency within us. Hence, quasi-needs are deficiency-oriented and situationally reactive. Quasi-needs are what we lack, yet need, from the environment in a rather urgent way. For example, when a situation pressures and stresses a person in some way, the person may say he or she needs a vacation, needs to make a good grade on a test, needs to get a haircut, needs to find her lost car keys, needs a piece of paper to write on, and so on in response to the situational pressures one faces in the moment. The strength of a quasi-need—its potency to gain attention and demand an action—is largely a function of how pressuring and demanding the environment is (e.g., “I just *have* to find my car keys!”). It is this situationally induced psychological context of tension, pressure, and urgency that supplies the motivation for the quasi-need.

Social Needs

Humans acquire social needs through experience, development, and socialization. In an extensive investigation of how people acquire social needs, one group of researchers sought to determine the childrearing antecedents of adult needs for achievement, affiliation, and power (McClelland & Pilon, 1983). The researchers initially scored the parental practices of mothers and fathers of 78 5-year-old boys and girls. When the children grew to the age of 31, the researchers assessed the social needs of each adult to see which early socialization experiences, if any, would predict adults’ social needs.

Only a few childrearing antecedents emerged as significant, but the few that did illustrate some early origins of social needs. Adults high in the need for achievement generally had parents who imposed high standards. Adults with high needs for affiliation generally had parents who used praise as a socialization technique. Adults with high needs for power generally had parents who were permissive about sex and aggression.

The finding that few childrearing experiences predict adult motives suggests that social needs are not set at an early age and, instead, emerge and change over time. For instance, some occupations foster achievement strivings more than do other occupations, because they provide opportunities for moderate challenges, independent work, personal responsibility for outcomes, and rapid performance feedback. People in such achievement-congenial occupations (e.g., entrepreneurs) show marked increases in their achievement strivings over the years compared to people in achievement-noncongenial occupations (e.g., nursing) (Jenkins, 1987). Similarly, workers in jobs that require assertiveness (e.g., sales) show increases in the need for power over the years (Veroff, Depner, Kulka, & Douvan, 1980).

Once acquired, we experience social needs as emotional and behavioral potentials that are activated by particular situational incentives (Atkinson, 1982; McClelland, 1985). That is, when an incentive associated with a particular need is present (e.g., a date is an intimacy incentive, an inspirational speech is a power incentive), the person high in

Table 7.2 Incentive That Activates Each Social Need's Emotional and Behavior Potential

Social Need	Incentive that Activates Each Need
Achievement	Doing something well to show personal competence
Affiliation	Opportunity to please others and gain their approval
Intimacy	Warm, secure relationship
Power	Having impact on others

that particular social need experiences emotional and behavioral activation (i.e., feels hope, seeks interaction). Experience teaches us to expect positive emotional reactions in response to some incentives rather than others (McClelland, 1985). The primary need-activating incentive for each social need appears in Table 7.2.

How Social Needs Motivate Behavior

Social needs arise and activate emotional and behavioral potential when need-satisfying incentives appear. For instance depending on one's unique constellation of acquired social needs, a school test might activate emotional fear and behavioral avoidance, whereas a school dance might activate emotional hope and behavioral approach. For another person who has a different constellation of social needs, the same test might bring emotional hope and behavioral approach, while the dance cues up only emotional fear and behavioral avoidance. With social needs, people react to events such as tests and school dances by learning the emotion-laden incentive value (positive or negative) of the objects around them. When these objects appear, they activate patterns of emotion and behavior associated with their corresponding social needs.

Social needs are mostly reactive in nature. They lie dormant within us until we encounter a potentially need-satisfying incentive that brings the social need to the front of our attention in terms of our thinking, feeling, and behaving. In addition, however, people also learn to anticipate the emergence of need-relevant incentives. People learn rather quickly that particular occupations, organizations, and recreational events, for example, are primarily opportunities for doing well and demonstrating personal competence, for pleasing others and gaining their approval, for participating in warm and secure relationships, or for having an impact on others. Thus, people gain and rely on personal knowledge of their social needs to gravitate toward environments that are capable of activating and satisfying their needs. The person high in achievement strivings might enter business to become an entrepreneur or a stockbroker, while the person high in power strivings might enter management or run for political office.

ACHIEVEMENT

The need for achievement is the desire to do well relative to a standard of excellence. It motivates people to seek "success in competition with a standard of excellence" (McClelland, Atkinson, Clark, & Lowell, 1953). A standard of excellence is any challenge to a

person's sense of competence that ends with an objective outcome of success versus failure, win versus lose, or right versus wrong. It is a broad term that encompasses (following Heckhausen, 1967): competitions with a task (e.g., solving a puzzle), competitions with the self (e.g., running a race in a personal best time), and competitions against others (e.g., becoming the class valedictorian).

What all types of achievement situations have in common is that the person has encountered a standard of excellence and has been energized by it, largely because he or she knows that the forthcoming performance will produce an emotionally meaningful evaluation of personal competence.

When facing standards of excellence, people's emotional reactions vary. Individuals high in the need for achievement generally respond with approach-oriented emotions such as hope, pride, and anticipatory gratification. Individuals low in the need for achievement, however, generally respond with avoidance oriented emotions such as anxiety, defense, and the fear of failure. People's behavioral responses to standards of excellence also vary. When confronting a standard of excellence, people show differences in choice, latency, effort, persistence, and the willingness to take personal responsibility for the ensuing success/failure outcomes (Cooper, 1983). High-need achievers, compared to low-need achievers, choose moderately difficult to difficult versions of tasks instead of easy versions (Kuhl & Blankenship, 1979; Slade & Rush, 1991); they quickly engage in achievement-related tasks rather than procrastinate (Blankenship, 1987); they show more effort and better performance because pride energizes them (Karabenick & Youssouff, 1968; Raynor & Entin, 1982); they persist in the face of difficulty and failure on moderately difficult tasks (Feather, 1961, 1963); and they take a personal responsibility for successes and failures rather than seeking help or advice from others (Weiner, 1980).

Standards of excellence therefore offer people two-edged swords. Sometimes these standards excite us and we react with approach emotion and behavior. Other times, however, these standards of excellence bring us anxiety, and we hesitate and react with avoidance emotion and behavior.

Origins of the Need for Achievement

Decades ago, researchers set out on a journey to discover the parenting-style roots of children's needs for achievement. The hope was to explain the social determinants of the high- versus low-need achiever's personality. As research progressed, it became increasingly clear that the need for achievement was a multifaceted phenomenon steeped not in a single trait but in a range of social, cognitive, and developmental processes.

Socialization Influences

Strong and resilient achievement strivings arise, in part, from socialization influences (Heckhausen, 1967; McClelland & Pilon, 1983). Children develop relatively strong achievement strivings when their parents provide the following: independence training (e.g., self-reliance), high performance aspirations, realistic standards of excellence (Rosen & D'Andrade, 1959; Winterbottom, 1958), high ability self-concepts (e.g., "This task will be easy for you"), a positive valuing of achievement-related pursuits (Eccles-Parsons, Adler, & Kaczala, 1982), explicit standards for excellence (Trudewind, 1982), a home

environment rich in stimulation potential (e.g., books to read), a wide scope of experiences such as traveling, and exposure to children's readers rich in achievement imagery (e.g., *The Little Engine That Could*; deCharms & Moeller, 1962). After years of investigation, the effort to identify the childhood socialization practices of high-need achievers was only partly successful, however, largely because longitudinal findings began to show that achievement strivings change a great deal from childhood to adulthood and that adult achievement strivings often changed from one decade to the next (Jenkins, 1987; Maehr & Kleiber, 1980).

Cognitive Influences

Some ways of thinking are more achievement related than are other ways of thinking (Ames & Ames, 1984), including the following:

- Perceptions of high ability
- Mastery orientation
- High expectations for success
- Strong valuing of achievement
- Optimistic attributional style

Perceptions of high ability facilitate both persistence (Felson, 1984; Phillips, 1984) and performance (Hansford & Hattie, 1982; Marsh, 1990). A mastery orientation (compared to a helpless orientation) leads people to choose moderately difficult tasks and to respond to difficulty by increasing rather than decreasing their effort (Dweck, 1986, 1999; Elliot & Dweck, 1988). Expectations for success breed approach-oriented behaviors such as seeking out optimal challenges (Eccles, 1984a) and performing well (Eccles, 1984b; Volmer, 1986). Valuing achievement in a particular domain predicts persistence in that domain (Eccles, 1984b; Ethington, 1991). An optimistic attributional style fosters positive emotions such as hope and pride following successes and keeps negative emotions such as fear and anxiety at bay (Weiner, 1985, 1986). Thus, when conditions in the home, school, gymnasium, workplace, and therapeutic setting promote high ability beliefs, a mastery orientation, expectations for success, a valuing of achievement, and an optimistic attributional style, these conditions provide the cognitive soil for cultivating an achievement way of thinking.

Developmental Influences

The identification of cognitive influences on achievement behavior led researchers to study how these ways of thinking develop over a person's life span (Heckhausen, 1982; Parsons & Ruble, 1977; Ruble, Crosofsky, Frey, & Cohen, 1992; Stipek, 1984; Weiner, 1979). Achievement-related beliefs, values, and emotions all show predictable developmental patterns (Stipek, 1984). Young children are notorious amateurs in estimating their actual abilities. They hold unrealistically high ability beliefs (Nicholls, 1979; Stipek, 1984), do not lower their ability beliefs following failure (Parsons & Ruble, 1977), and ignore their poor performance in relation to their peers (Ruble, Parsons, & Ross, 1976). During middle childhood, however, children increasingly pay attention to peer performance comparisons, and by late childhood, they rely on a fuller gamut of information

to construct relatively realistic ability beliefs: self-evaluations, peer evaluations, teacher evaluations, and parental evaluations (Felson, 1984; Nicholls, 1978, 1979; Rosenholtz & Rosenholtz, 1981; Ruble et al., 1992; Stipek, 1984). As to values, young children value the approval of others very much, while they care very little about achievement per se (Stipek, 1984). Achievement-related values need to be internalized, such as when parents place a high or low value on achievement (Eccles-Parsons et al., 1982) and one's occupational career places a high or low value on achievement (Waterman, 1988). As to emotions, children are not born with pride or shame; neither is an innate emotion. Instead, pride emerges from a developmental history of success episodes ending in mastery; shame emerges from a developmental history of failure episodes ending in ridicule (Stipek, 1983). Developmentally, we learn to be pride-prone or shame-prone when facing a standard of excellence.

Atkinson's Model

Two theoretical approaches dominate the understanding of achievement motivation: classical and contemporary (Elliot, 1997). The classical view is Atkinson's model of achievement behavior, which includes the dynamics-of-action model. The contemporary view is a cognitive approach that centers on the goals people adopt in achievement situations. Each approach will be discussed in turn, but what is common between the two is that they share the same portrayal of achievement motivation as an inherent struggle of approach versus avoidance. All of us experience standards of excellence as a two-edged sword: Partly we feel excitement and hope and anticipate the pride of a job well done; partly we feel anxiety and fear and anticipate the shame of possible humiliation. Thus, achievement motivation exists as a sort of balance between the emotions and beliefs underlying the tendency to approach success versus the emotions and beliefs underlying the tendency to avoid failure.

John Atkinson (1957, 1964) argued that the need for achievement only partly predicts achievement behavior. Achievement *behavior* depends not only on the individual's dispositional need for achievement but also on his or her task-specific probability of success at a task and the incentive for succeeding at that task. For Atkinson, some tasks had high probabilities for success, whereas others had low probabilities for success. Also, some tasks offered greater incentive for success than did others. For instance, consider the classes you are presently taking. Each course has a different probability of success (e.g., a senior-level advanced calculus course is generally harder than is an introductory-level physical education class) and a different incentive value (e.g., doing well in a course in your major is generally valued more than doing well in a course outside of your major).

Atkinson's theory features four variables: achievement behavior and its three predictors—need for achievement, probability of success, and incentive for success. Achievement behavior is defined as the tendency to approach success, abbreviated as *Ts*. The three determining factors of *Ts* are (1) the strength of a person's need for achievement (*Ms*, motive to succeed), (2) the perceived probability of success (*Ps*), and (3) the incentive value of success (*Is*). Atkinson's model is expressed in the following formula:

$$Ts = Ms \times Ps \times Is$$

Tendency to Approach Success

The first variable in the equation, Ms , corresponds to the person's need for achievement. The variable Ps is estimated from the perceived difficulty of the task and from the person's perceived ability at that task. The variable Is is equal to $1 - Ps$. Therefore, if the probability of success is .25, the incentive for success at that task would be .75 ($1.00 - 0.25$). That is, incentive value for success during difficult tasks is high whereas it is low during easy tasks. To make sense of the behavioral tendency to approach success (Ts), consider a high school wrestler who is scheduled to wrestle two different opponents this week. The first opponent is last year's state champion ($Ps = .1$), so he consequently has a strong incentive to beat the champ ($Is = 1 - Ps$, which = .9). The second opponent is his equal ($Ps = .5$) so he consequently has a moderate incentive to succeed ($Is = .5$). If we use an arbitrary number like 10 to characterize the wrestler's dispositional need for achievement (Ms), Atkinson's theory predicts the wrestler will experience the greater achievement motivation for the second wrestler ($Ts = 2.50$, because $10 \times .5 \times .5 = 2.50$) than for the first wrestler ($Ts = 0.90$, because $10 \times .1 \times .9 = 0.90$), because optimal challenge ($Ps = .5$) provides the richest motivational combination of expectancy of success and incentive for success.

Tendency to Avoid Failure

Just as people have a need for achievement (Ms), they also have a motive to avoid failure (Maf) (Atkinson, 1957, 1964). The tendency to avoid failure motivates the individual to defend against the loss of self-esteem, the loss of social respect, and the fear of embarrassment (Birney, Burdick, & Teevan, 1969). The tendency to avoid failure, abbreviated Taf , is calculated with a formula that parallels that for Ts :

$$Taf = Maf \times Pf \times If$$

The variable Maf represents the motive to avoid failure, Pf represents the probability of failure (which, by definition, is $1 - Ps$), and If represents the negative incentive value for failure ($If = 1 - Pf$). Thus, if an individual has a motive to avoid failure of, say, 10, then the tendency to avoid failure on a difficult task ($Pf = .9$) can be calculated as 0.90 ($Maf \times Pf \times If$, which = $10 \times .9 \times .1 = 0.90$).

Combined Approach and Avoidance Tendencies

Atkinson conceptualized Ms as a motivational force to seek out achievement situations and Maf as a motivational force to escape from (or be anxious about) achievement situations. Thus, to engage in any achievement task is to enter into a risk-taking dilemma in which the person struggles to find a balance between the attraction of pride, hope, and social respect on the one hand versus the repulsion of shame, fear, and social humiliation on the other hand. When Ts is greater than Taf , the person approaches the opportunity to test personal competence against the standard of excellence, but when Taf is greater than Ts , the person hesitates or avoids the opportunity altogether. Atkinson's complete formula for predicting the tendency to achieve (Ta) and hence for displaying achievement-related behaviors (i.e., choice, latency, effort, persistence) is as follows:

$$Ta = Ts - Taf = (Ms \times Ps \times Is) - (Maf \times Pf \times If)$$

Although the model can appear to be overwhelming at first, in actuality one needs to know only three variables: the individual's approach motive (Ms), the individual's avoidance motive (Maf), and probability of success (Ps) on the task at hand. Notice that Is , Pf , and If are all calculated solely from the value of Ps [if $Ps = .3$, then $Is = .7$, $Pf = .7$, and $If = .3$]. If you work through a couple of numerical examples, you will find two general principles that underlie the numerical value for Ta . First, Ta is highest when Ts is greater than Taf and lowest when Taf is greater than Ts (a personality factor). Second, Ta is highest when Ps equals .5 and lowest when Ps is around .9 (task is too easy to generate an incentive to succeed) or .1 (task is too difficult to be motivating).

Achievement for the Future

Not all achievement situations are alike, as some have implications that affect one's future achievement efforts, whereas others have implications only for the present (Husman & Lens, 1999; Raynor, 1969, 1970, 1974, 1981). For example, a track athlete tries to win a race not only to experience the pride of a moment's accomplishment, but a win in today's race might lead to invitations to other important track meets, such as qualifying for the state championships or gaining a college scholarship. Similarly a student works hard in math class partly out of enjoyment but also partly out of the belief that doing well in math will be instrumental in helping her achieve the long-term goals she has for herself.

"Future achievement orientation refers to an individual's psychological distance from a long-term achievement goal (e.g., winning the state championship). The importance of future achievement orientation is that, other things being equal, any achievement goal perceived far away in time receives less approach-versus-avoidance weight than does a goal in the very near future. That means future goals generate less approach than do immediate goals. However, future achievement strivings can add to present-day achievement motivation by adding additional future motivation to present motivation (e.g., motivation for today + motivation for next week + motivation for next month + motivation for next year + motivation for one's career; Raynor, 1981). Thus, achievement behavior is a function of not only Ms , Maf , and Ps , but also whether the present achievement will lead toward some future achievement. From this point of view, achievement behavior is a series of steps in a path, and those achievement situations that are psychologically near have more impact on Ta than those that are psychologically far (Gjesme, 1981), though achievement strivings that are psychologically far can add to, supplement, and strengthen Ta in the present (Raynor & Entin, 1982).

Dynamics-of-Action Model

In the dynamics-of-action model, achievement behavior occurs within a stream of ongoing behavior (Atkinson & Birch, 1970, 1974, 1978). The stream of behavior is determined largely by three forces: instigation, inhibition, and consummation.

Instigation causes a rise in approach tendencies and occurs by confronting environmental stimuli associated with past reward (i.e., anything that cultivates an increased hope for success). Instigation is the same as Ts .

Inhibition causes a rise in avoidance tendencies and occurs by confronting environmental stimuli associated with past punishment (i.e., anything that cultivates an increased fear of failure). Inhibition is the same as Taf . Therefore, instigation and inhibition are

synonyms for T_s and T_{af} . The one new variable in the dynamics-of-action model is consummation.

Consummation refers to the fact that performing an activity brings about its own cessation (e.g., running, eating, drinking, sleeping, reading this book). Adding consummatory forces allows achievement behavior to be understood as dynamic (changing over time) instead of episodic or static. For instance, your achievement strivings during any one college class change as the class progresses throughout the semester week after week. After 16 weeks, people often feel that they are tired of the class, saying, "Okay, thanks, that's enough."

The four panels in Figure 7.1 portray achievement behaviors over time (Blankenship, 1987). Each panel shows the individual's behavioral preference for an achievement task (a task that arouses both hope for success and fear of failure) and for a nonachievement task (an emotionally neutral task). The four panels correspond to four imaginary people with different levels of instigative and inhibitory forces. Panel 1 shows behavior with high instigation and low inhibition ($M_s > M_{af}$). Panel 2 shows behavior with high levels of both instigation and inhibition ($M_s = M_{af}$, and both are high). Panel 3 shows behavior with low levels of both instigation and inhibition ($M_s = M_{af}$, and both are low). Panel 4 shows behavior with low instigation and high inhibition ($M_s < M_{af}$).

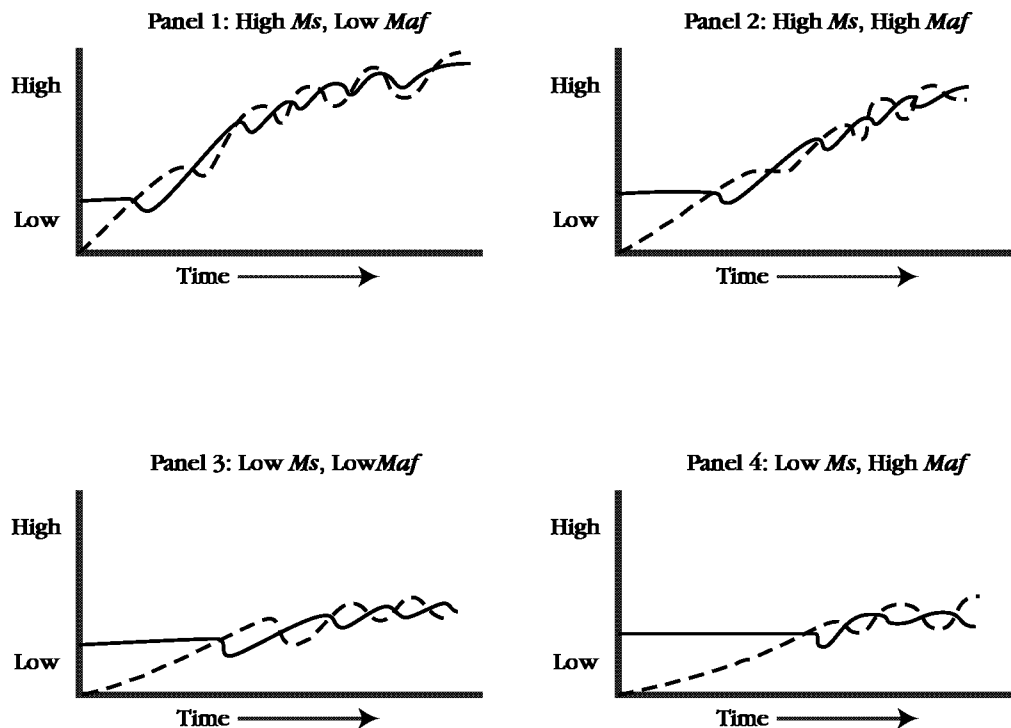


Figure 7.1 Streams of Behavior for People High and Low in M_s and M_{af}

Source: From "A Computer-Based Measure of Resultant Achievement Motivation," by V. Blankenship, 1987, *Journal of Personality and Social Psychology*, 53, pp. 361–372. Copyright 1987 by the American Psychological Association. Adapted with permission.

Note: Dashed line represents tendency strength to engage the achievement-related task; solid line represents tendency strength of nonachievement task.

Notice that in Figure 7.1 all four individuals, represented in the four separate panels of the figure, begin interacting first with the nonachievement-related activity (e.g., watching television). The question then becomes, “How much time passes until each person starts to engage the achievement task (e.g., studying)?” The individual in panel 1 (i.e., high need for achievement) shows the shortest latency for engaging the achievement task (i.e., the quickest achievement behavior), while the individual in panel 4 (i.e., low need for achievement, or high fear of failure) shows the longest latency for engaging the achievement task. The person in panel 4 basically procrastinates. Once achievement behavior has begun, it tends to consume itself, and the individual will eventually return to the nonachievement-related task, which over time will also consume itself (i.e., you can only watch so much television). The motive profiles (M_s in relation to M_{af}) explain not only latency to initiate achievement behavior but also its persistence, once begun. Three important messages are communicated in Figure 7.1:

1. Latency to begin an achievement depends on motive strength (M_s versus M_{af}).
2. Persistence on an achievement task depends on motive strength (M_s versus M_{af}).
3. Switching to a nonachievement task occurs with rising consumption.

Conditions That Involve and Satisfy the Need for Achievement

Three situations are particularly noteworthy for their ability to involve and satisfy the need for achievement: moderately difficult tasks, competition, and entrepreneurship (McClelland, 1985).

Moderately Difficult Tasks

High-need achievers ($M_s > M_{af}$) outperform low-need achievers ($M_{af} > M_s$) on moderately difficult tasks. High-need achievers do not, however, outperform low-need achievers on easy or difficult tasks (Karabenick & Yousseff, 1968; Raynor & Entin, 1982). Performance on a moderately difficult task activates in the high achiever a set of positive emotional and cognitive incentives not socialized into the low achiever. Emotionally, moderately difficult tasks provide an arena for best testing skills and experiencing emotions such as pride and satisfaction. Cognitively, moderately difficult tasks provide an arena for best diagnosing one's sense of competence and level of ability (Trope, 1975, 1983). Hence, moderately challenging tasks provide a mixture of pride from success and information to diagnose abilities, a mixture that motivates high-need achievers more than it does low-need achievers (Atkinson, 1981; Trope & Brickman, 1975).

Competition

Interpersonal competition captures much of the risk-taking dilemma inherent in achievement settings. It promotes positive emotion, approach behavior, and improved performance in high-need achievers, but negative emotion, avoidance behaviors, and debilitated performance in low-need achievers (Covington & Omelich, 1984; Epstein & Harackiewicz, 1992; Ryan & Lakie, 1965; Tauer & Harackiewicz, 1999). Consider that high-need achievers seek diagnostic ability information (Trope, 1975), seek opportunities to test their skills (Epstein & Harackiewicz, 1992; Harackiewicz, Sansone, & Manderlink, 1985),

value competence for its own sake (Harackiewicz & Manderlink, 1984), are attracted to self-evaluation opportunities (Kuhl, 1978), and enjoy demonstrating or proving their ability (Harackiewicz & Elliot, 1993). Competition offers all these attributes and is therefore attractive to high-need achievers (Harackiewicz & Elliot, 1993). For low-need achievers, competition's evaluative pressures arouse mostly anxiety and avoidance (Epstein & Harackiewicz, 1992).

Entrepreneurship

David McClelland (1965, 1987) finds that high-need achievers often display the behavioral pattern of entrepreneurship. He assessed the need for achievement in a group of college students and then waited 14 years to check on the occupational choices they made. Each occupation was classified as either entrepreneurial (e.g., founder of own business, stockbroker) or not (e.g., office manager, service personnel). Results confirmed that most entrepreneurs were high-need achievers in college. Entrepreneurship appeals to the high-need achiever because it requires taking moderate risks and assuming responsibility for one's successes and failures. It also provides concrete, rapid performance feedback (e.g., moment-to-moment profits and losses), feedback that generates emotions such as pride and satisfaction, and feedback that allows one to diagnose personal competence and rate of improvement on a continual basis. High-need achievers prefer just about any occupation that offer challenge, independent work, personal responsibility, and rapid performance feedback (Jenkins, 1987; McClelland, 1961).

Achievement Goals

Atkinson's model treats achievement behavior as a choice: Approach the standard of excellence or avoid it. The model seeks to understand whether a person will approach success or avoid failure, and if so, with what intensity, latency, and persistence that choice will be pursued. Contemporary researchers, however, have become increasingly interested in *why* a person shows achievement behavior, not so much in *whether* achievement behavior occurs.

In daily life, we often do not so much seek out standards of excellence as we have them forced upon us. That is, we are asked, and are often required, to approach a standard of excellence put before us, as happens at school (a test), at work (a sales quota), in sports (an opponent), and so on. In these sorts of settings, contemporary achievement motivation researchers ask why people adopt one type of achievement goal over another type.

As summarized in Table 7.3, the two main achievement goals are mastery goals and performance goals (Ames, 1992; Ames & Archer, 1988; Dweck, 1986, 1990; Nicholls, 1984; Spence & Helmreich, 1983). The two goals differ from one another in terms of the person's understanding as to what constitutes competence (Elliot & McGregor, 1999). With mastery goals, the person facing the standard of excellence seeks to develop greater competence, make progress, improve the self, and overcome challenges through intense and persistent effort. Achieving a mastery goal means making progress according to a self-set standard. With performance goals, the person facing the standard of excellence seeks to demonstrate or prove competence, display high ability, outperform others, and succeed with little apparent effort. Achieving a performance goal means doing better than others.

Table 7.3 Distinguishing between Mastery and Performance Goals

Adoption of a Mastery Goal	Adoption of a Performance Goal
Develop one's competence	Prove one's competence
Make progress	Display high ability
Improve the self	Outperform others
Overcome difficulties with effort and persistence	Succeed with little apparent effort

The distinction between mastery and performance goals is important because the adoption of mastery goals in an achievement context (e.g. in school, at work, in sports) is associated with positive and productive ways of thinking, feeling, and behaving, whereas the adoption of performance goals in an achievement context is associated with relatively negative and unproductive ways of thinking, feeling, and behaving (Ames & Archer, 1988; Dweck, 1999; Dweck & Leggett, 1988; Hackiewicz & Elliot, 1993; Linnenbrink, 2005; Nolen, 1988; Spence & Helmreich 1983). The benefits of adopting a mastery, rather than a performance, goal are illustrated in Figure 7.2.

When people adopt mastery goals compared to when they adopt performance goals, they tend to (1) prefer challenging tasks they can learn from rather than easy tasks on which they can demonstrate high ability (Ames & Archer, 1988; Elliot & Dweck, 1988), (2) use conceptually based learning strategies such as relating information to existing knowledge rather than superficial learning strategies such as memorizing (Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1988), (3) are more likely to be intrinsically rather than extrinsically motivated (Heyman & Dweck, 1992), and (4) are more likely to ask for help and information from others that will allow them to continue working on their own (Newman, 1991). These adaptive strategies allow those with mastery goals to work harder (increase effort in the face of difficulty rather than turn passive or quit; Elliot & Dweck, 1988), persist longer at the task (Elliot & Dweck, 1988), and perform better (Spence & Helmreich, 1983).

Educational psychologists find the concept of achievement goals to be helpful in understanding students' classroom-based achievement motivation (Ames & Archer, 1988). Part of the reasons achievement goals appeal to educators is that teachers exert a relatively strong influence over the types of achievement goals students adopt. What classroom teachers do to promote either mastery goals or performance goals during instruction can be seen in Table 7.4. Hence, to promote mastery rather than performance goals, teachers (and coaches, parents, managers, etc.) can define success as improvement, value effort, communicate that satisfaction comes from hard work, focus on how students learn, view errors as a natural and welcomed part of the learning process, explain the utility of effort when trying to learn something new, and assess (grade) students on their extent of improvement and progress. When teachers intentionally create such a learning climate, students are more likely to adopt mastery over performance goals (Maehr & Midgley, 1996; Meece & Miller, 1999).

Integrating Classical and Contemporary Approaches to Achievement Motivation

The classical (Atkinson's theory) and contemporary (achievement goals) approaches to achievement motivation can be combined and integrated into a single comprehensive

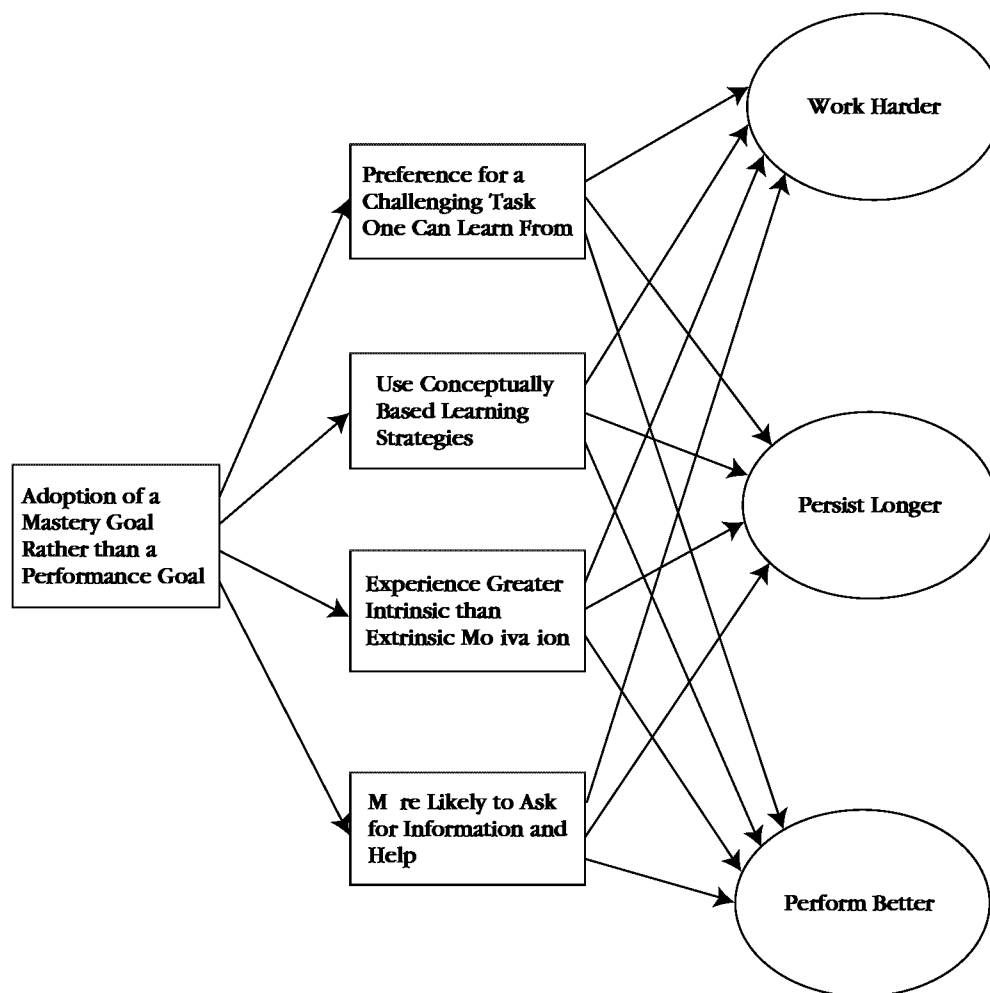


Figure 7.2 Positive and Productive Ways of Thinking, Feeling, and Behaving Associated with Mastery Goal

model (Elliot, 1997). In the integrated model, mastery goals and two different types of achievement performance goals exist: performance-approach and performance-avoidance.

The overlap within the classical and contemporary approaches occurs within the relationship between *Ms*, *Maf*, and *Ps* and the types of goals the person adopts. The classical achievement motivation constructs (*Ms*, *Maf*, and *Ps*) serve as general, personality-like antecedent conditions that influence the specific type of goals the person adopts in a given achievement setting. For instance, the relationships between *Ms*, *Maf*, and *Ps* to the three types of achievement goals appears in Figure 7.3. People high in the need for achievement tend to adopt performance-approach goals, people high in the fear of failure tend to adopt performance-avoidance goals, and people with high competency expectancies tend to adopt mastery goals. The figure shows the results from an actual study that tracked participants' achievement strivings, achievement goals, course grades, and intrinsic motivation toward a college course (Elliot & Church, 1997).

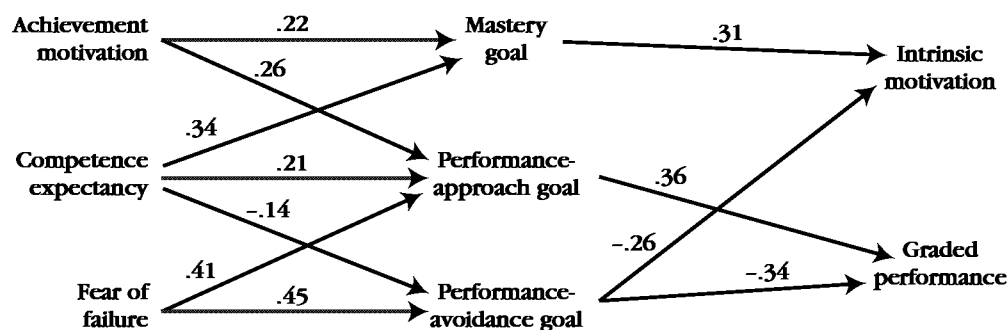
Table 7.4 Manifestations of Mastery and Performance Goals in the Classroom Context

Climate Dimension	Mastery Goal	Performance Goal
Success defined as	Improvement, progress	High grades, high normative performance
Value placed on	Effort, learning	Normatively high ability
Reasons for satisfaction	Working hard, challenge	Doing better than others
Teacher oriented toward	How students are learning	How students are performing
Views errors or mistakes as	Part of learning	Anxiety eliciting
Focus of attention	Process of learning	Own performance relative to others' performance
Reasons for effort	Learning something new	High grades, performing better than others
Evaluation criteria	Absolute progress	Normative

Note: The table can be interpreted by selecting one classroom climate dimension of interest and then reading across the row for how students with mastery goals rate—what they believe, what they are likely to say—on that dimension and then for how students with performance goals rate on that dimension.

Source: From “Achievement Goals in the Classroom: Students’ Learning Strategies and Motivation Processes,” by C. Ames and J. Archer, 1988, *Journal of Educational Psychology*, 80, pp. 260–267. Copyright 1988, American Psychological Association. Reprinted by permission.

The need for achievement served as an antecedent for adopting mastery and performance-approach goals, the fear of failure served as an antecedent for adopting performance-avoidance goals, and competency expectancies served as an antecedent for adopting mastery and performance-approach goals (i.e., performance goals in general), and competency expectancies served as an antecedent for adopting mastery and performance-approach goals and for rejecting performance-avoidance goals (notice the negative sign for $-.14$). Furthermore, once these types of achievement goals were adopted, mastery goals increased intrinsic motivation, whereas performance-avoidance goals decreased it; performance-approach goals increased performance, whereas performance-avoidance goals decreased it (Elliot & Church, 1997). To communicate a better understanding of just what performance-approach and performance-avoidance

**Figure 7.3** Antecedents and Consequences of the Three Achievement Goals

Source: From “A Hierarchical Model of Approach and Avoidance Achievement Motivation,” by A. J. Elliot and M. A. Church, 1997, *Journal of Personality and Social Psychology*, 72, pp. 218–232. Copyright 1997, American Psychological Association. Reprinted with permission.

Table 7.5 Two Items from Each Scale of the Achievement Goals Scale**MASTERY GOAL**

1. I desire to completely master the material presented in this class.
2. In a class like this, I prefer course material that really challenges me so I can learn new things.

PERFORMANCE-APPROACH GOAL

1. My goal in this class is to get a better grade than most of the students.
2. I want to do well in this class to show my ability to my family, friends, advisors, and others.

PERFORMANCE-AVOIDANCE GOAL

1. I just want to avoid doing poorly in this class.
2. My fear of performing poorly in this class is often what motivates me.

Source: From “Approach and Avoidance Motivation and Achievement Goals,” by A. J. Elliot, 1999, *Educational Psychologist*, 34, pp. 169–189.

goals are, sample items from the Achievement Goal Questionnaire (Elliot & Church, 1997) appear in Table 7.5.

Integrating the classical and contemporary approaches to achievement motivation overcomes the shortcomings of each individual approach (Elliot, 1997). The problem with the classical approach is that general personality dispositions (*Ms*, *Maf*) do a poor job predicting achievement behavior in specific settings. In other words, general personality factors are not necessarily the regulators of achievement behavior in specific life domains such as school sports, and work. A person might show strong achievement strivings at work yet on the fear of failure in social situations. The problem with the contemporary approach is that a person is potentially left wondering where these different types of achievement goals come from in the first place. In other words, if you know a basketball player has a performance-approach goal (e.g., to have the highest scoring average on the team), the question remains as to why he or she adopted that particular achievement goal rather than another. Together, the two theories can predict achievement behavior in specific situations (using achievement goals) and can explain from where these achievement goals arise (using personality dispositions and competence perceptions)

Avoidance Motivation and Well-Being

So far the discussion on achievement motivation has focused on the “approach” side of achievement. But the fear of failure drives people to regulate their behavior in all sorts of ways that interfere with performance, persistence, and emotionality (Birney et al., 1969; Elliot & Sheldon, 1997; Schmalt, 1982). That is, the fear of failure (*Maf*) prompts people to adopt performance-avoidance goals, such as trying to avoid making a mistake, performing poorly, or embarrassing oneself. These avoidance-oriented goals lead people to underperform, quit quickly, and lose interest in what they are doing (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Roney, Higgins, & Shah, 1995).

Such a relationship (fear of failure → performance-avoidance goals → maladjusted coping style in achievement settings) has important implications for personal adjustment and mental health. The more people fear failure, the more likely they are to adopt

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performance-avoidance goals. And the more avoidance goals a person harbors, the poorer his subsequent well-being tends to be on measures such as low self-esteem, personal control, vitality, life satisfaction, and psychological well-being (Elliot & Sheldon, 1997). The primary reason well-being suffers when one adopts performance-avoidance goals is that in trying so hard to avoid poor performances, one regulates day-to-day behavior in ways that produce dissatisfaction, negative affect, and little enjoyment or fulfillment. Always trying to avoid embarrassing oneself, even when successfully accomplished, takes its toll on well-being. An example of this process appears in Box 7.

BOX 7

A follow-up investigation showed that additional dispositional characteristics predispose people to adopt performance-avoidance goals, including neuroticism and poor life skills (e.g., poor social skills, poor time management; Elliot et al., 1997). People high in the fear of failure, high in neuroticism, and low in life-skill competence tended to adopt performance-avoidance goals (e.g., avoid being a boor at parties, avoid being lonely, avoid smoking or drinking). Trying to avoid doing something turns out to be a hard thing to do, relative to trying to do something (e.g., be friendly at parties). When people pursue avoidance goals, they generally perceive that they make little progress in the effort, and it is this perception of a lack of progress that leads to dissatisfaction, negative affectivity, diminished interest, and impaired psychological well-being.

Implicit Theories

Generally speaking, the way people think about their personal qualities such as intelligence and personality can be characterized in one of two ways (Dweck, 1999, 2006). Some people see personal qualities as fixed and enduring characteristics. Other people, in contrast, see personal qualities as malleable characteristics that can be increased with effort. The first implicit theory applies to “entity theorists,” people who believe they (and others) are endowed with fixed, enduring qualities. The thinking is “you either have it, or you don’t” in that some people are smart and motivated while other people are not. The second implicit theory applies to “incremental theorists,” people who believe they (and others) are endowed with malleable, changing qualities. The thinking is “the more you try and the more you learn, the better you get” in that all people can become smarter and more motivated, at least in proportion to their effort.

As an illustration, consider whether you agree or disagree with the following statements (Dweck, 1999):

- Your intelligence is something about you that you cannot change very much.
- You can always greatly change how intelligent you are.

Entity theorists will generally agree with the first statement but disagree with the second. Entity theorists believe people have a fixed amount of intelligence, personality, or motivation. In other words, characteristics exist as entities or traits that dwell within the person. Incremental theorists will generally agree with the second statement but disagree with the first. Incremental theorists believe personal qualities are something that people cultivate through effort and learning. While they realize that some people are high while other people are low in these qualities, incremental theorists believe that instruction, guidance, effort, learning, and experience increase and improve these qualities.

Implicit theories are important to achievement strivings because they guide the type of goals people pursue (Dweck, 1999; Dweck & Elliot, 1983; Elliot & Dweck, 1988). In achievement situations, entity theorists generally adopt performance goals. People who adopt performance goals are concerned with looking smart and with not looking dumb. That is, they are concerned with performing well, especially while others are watching. The goal is therefore to use performance as the means to prove that one has much of a desirable characteristic (i.e., intelligence). In contrast, incremental theorists generally adopt mastery goals in achievement situations. People who adopt mastery goals are concerned with mastering something new or different and with learning or understanding

something new. That is, they are concerned with learning and improving as much as they can. The goal is therefore to use task engagements to improve—to get smarter by learning something new or important.

Both types of goals—performance and mastery—are common in the culture, and both encourage achievement (Elliot & Church, 1997; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997). But typically, social settings like the workplace, sports field, and classroom pit these two goals against one another and ask (force) workers, athletes, and students to pick one goal over the other. People are often asked to choose between courses of action that allow them to:

- Look smart and competent but at the sacrifice of learning something new.
- Learn something new, useful, or important, but at the sacrifice of looking smart or competent.

For instance, when college students select “elective” courses, they sometimes choose a course in which they can be assured of doing well, looking smart, avoiding errors, and impressing others, or they sometimes choose a course in which they hope will teach them something new, provide opportunities to learn, and an arena to grow their skills. When given such a choice, about half of the population will, on average, select a performance goal while the other half will select a mastery goal.

Different Implicit Theories Mean Different Achievement Goals

When entity and incremental theorists face achievement situations, they prefer different goals. This is important because the type of achievement goal one pursues predicts that person’s subsequent motivation, emotion, and performance (Ames & Archer, 1988; Stipek & Kowalski 1989).

A series of studies with elementary school, middle school, and college students (Dweck & Leggett, 1988; Mueller & Dweck, 1997) assessed students’ entity versus incremental theories, using questions based on Dweck’s (1999) statements on intelligence (listed previously). The researchers then asked the students to choose between tasks that were either: (1) fun and easy, easy enough so mistakes would not occur, or (2) hard, new, and different—confusion and mistakes could occur, but the student would probably learn something useful. The more students endorsed an entity theory, the more they chose the performance opportunity (#1 above). The more students endorsed an incremental theory, the more they chose the learning opportunity (#2 above).

Therefore, like achievement strivings (*Ms*, *Maf*), implicit theories (entity, incremental) predict the type of achievement goal the individual chooses to pursue—performance or mastery. But do implicit theories cause achievement goal choices?

To answer this causation question, researchers manipulated participants’ implicit theory beliefs by asking them to read an informative booklet that provided rather convincing (and true) evidence to support either an entity or an incremental theory of intelligence. The booklet offered passages about the intelligence of notable individuals (including Albert Einstein, Helen Keller, and the child Rubik’s Cube champion) as either a fixed and inborn trait or as a malleable and acquired talent. Participants were randomly assigned to read either the entity-touting or the incremental-touting booklet. All participants were then given a choice between a performance-approach goal (task is hard enough to show

Table 7.6 Effect of Implicit Theories (Entity, Incremental) on Achievement Goal Choice (Performance-Approach, Performance-Avoidance, Mastery)

Implicit Theory	Goal Choice		
	Performance-Avoidance Goal	Performance-Approach Goal	Mastery Goal
Entity (n = 22)	50.0	31.8	18.2
Incremental (n = 41)	9.8	29.3	60.9

Note. Numbers represent percentages, and the two rows add to 100%.

Source: From “A Social-Cognitive Approach to Motivation and Personality.” By C. S. Dweck and E. L. Leggett, 1988, *Psychological Review*, 95, pp. 256–273. Copyright 1988 by American Psychological Association. Reprinted by permission.

that you are smart), a performance-avoidance goal (task is easy enough so that you won't get many wrong), or a mastery goal (task is hard, new, and different so that you can learn from it). As shown in Table 7.6, students who read the passage supporting an entity view of intelligence were significantly more likely to pursue a performance goal (81.8%) rather than a mastery goal (18.2%), whereas students who read the passage supporting an incremental view of intelligence were significantly more likely to pursue the mastery goal (60.9%) rather than a performance goal (39.1%). These results communicate two conclusions. First, implicit theories are malleable and can be changed (as per the booklets). Second, implicit theories cause people to pursue either performance or mastery goals (as per the findings reported in Table 7.6).

Meaning of Effort

For an entity theorist, the meaning of effort is “the more you try, the dumber you therefore must be.” High effort means low ability. High effort is, in fact, evidence that the performer lacks ability. For an incremental theorist, the meaning of effort is that it is a tool, the means by which people turn on and take advantage of their skills and abilities. Given this introduction, consider your own reaction to the following:

You see a puzzle in a science magazine and it's labeled “Test your IQ!” You work on it for a very long time, get confused, start over and over, and finally make progress, but very slowly, until you solve it. How do you feel? Do you feel sort of dumb because it required so much effort? Or, do you feel smart because you worked hard and mastered it? (Dweck, 1999)

The self's interpretation of the meaning of effort is most important in a motivational analysis of behavior when the individual faces a difficult task (Dweck, 1999). What one needs when facing a difficult task is high effort. But marshaling forth high effort possesses a motivational dilemma for the entity theorist. High effort is needed, but high effort is precisely that which signals low ability, which is precisely the sort of thing an entity theorist wants most to avoid. Entity theorists do not really believe that high effort will be effective, even on difficult tasks. So on difficult endeavors, they tend to adopt maladaptive motivational patterns by (1) withholding effort, (2) engaging in self-handicapping to protect the self, and (3) never really understanding

or appreciating what effort expenditures can do for them in life (Dweck, 1999; Stipek & Gralinski, 1996; Zuckerman, Kieffer, & Knee, 1998). Incremental theorists, however, do understand the utility of effort—effort is that which becomes learning. Incremental theorists experience no conflict between the effort challenging tasks require and their willingness to roll up their sleeves and engage in effortful and persistent work.

Negative feedback works much the same way as does a difficult task in terms of its effect on entity and incremental thinking (Hong, Chiu, Dweck, Lin, & Wan, 1999). When given negative feedback, entity thinkers attribute their poor performance to low ability and withdraw their effort. On the other hand, when given negative feedback, incremental thinkers attribute their poor performance to not trying hard enough and increase their effort by taking the remedial action necessary to adapt to and reverse failure and negative feedback. The bottom line is that difficult tasks, negative feedback, and especially effort mean different things to entity and incremental thinkers. One meaning system, that embraced by incremental thinkers, is significantly more motivationally adaptive than is the other.

AFFILIATION AND INTIMACY

In its early study, the need for affiliation was conceptualized as “establishing, maintaining, or restoring a positive, affective relationship with another person or persons” (Atkinson, Heyns, & Veroff, 1954). According to this definition, the need for affiliation is not the same construct as extraversion, friendliness, or sociability. In fact, early investigators noted that persons high in the need for affiliation were often less popular than persons low in affiliation strivings (Atkinson et al., 1954; Crowne & Marlowe, 1964; Shipley & Veroff, 1952). Rather than being rooted in extraversion and popularity, the need for affiliation is rooted in a fear of interpersonal rejection (Heckhausen, 1980). People with high-need affiliation interact with others to avoid negative emotions, such as fear of disapproval and loneliness, and typically experience much anxiety in their relationships. People high in the need for affiliation come across not as extraverted, friendly, or sociable but, instead, as “needy.”

As they try to calm their anxieties, these high-need people monitor whether others disapprove of them and spend time seeking reassurance from others, a pattern of behavior that explains why they come across as needy. The need for affiliation then can be thought of as the need for approval, acceptance, and security in interpersonal relations.

The more contemporary view of affiliation strivings recognizes its two facets: the need for approval and the need for intimacy. This dual view of affiliation strivings answers the criticism that the former conceptualization was too heavy on rejection anxiety and too light on affiliation interest, the more positive aspect of the need for affiliation (Boyatzis, 1973; McAdams, 1980).

The call for a more positive conceptualization of affiliation strivings (i.e., intimacy motivation) was answered by giving attention to the social motive for engaging in warm, close, positive interpersonal relations that hold little fear of rejection (McAdams, 1980, 1982a, 1982b; McAdams & Constantian, 1983; McAdams, Healy, & Kraus, 1984). The intimacy motive reflects a concern for the quality of one’s social involvement. It is a willingness to “experience a warm, close, and communicative exchange with another person” (McAdams, 1980).

Table 7.7 Profile of High Intimacy Motivation

Category	Description
Thoughts	Of friends, of relationships
Story Themes	Relationships produce positive affect, reciprocal dialogue, expressions of relationship commitment and union, and expressions of interpersonal harmony
Interaction Style	Self-disclosure Intense listening habits Many conversations
Autobiography	Themes of love and dialogue are mentioned as personally significant life experiences
Peer Rating	Individual rated as warm, loving, sincere, nondominant
Memory	Enhanced recall with stories involving themes of interpersonal interactions

A profile of how the need for intimacy expresses itself appears in Table 7.7. An individual with a high need for intimacy thinks frequently about friends and relationships; writes imaginative stories about positive affect-laden relationships; engages in self-disclosure, intense listening, and frequent conversations; identifies love and dialogue as especially meaningful life experiences; is rated by others as warm, loving, sincere, and nondominant; and tends to remember life episodes as those that involve interpersonal interactions.

The full picture of affiliation strivings includes a theoretical conceptualization that includes both its positive aspects—the need to engage in warm, close, positive relations (intimacy need), and its negative aspects—the anxious need to establish, maintain, and restore interpersonal relations (affiliation need). These positive and negative aspects affect the extent to which people live happy, well-adjusted lives (McAdams & Vaillant, 1982).

Conditions That Involve the Affiliation and Intimacy Needs

The principal condition that involves the need for affiliation is the deprivation from social interaction (McClelland, 1985). Conditions such as loneliness, rejection, and separation raise people's desire, or social need, to be with others. Hence, the need for affiliation expresses itself as a deficiency-oriented motive (the deficiency is a lack of social interaction). In contrast, the desire, or social need, for intimacy arises from interpersonal caring and concern, warmth and commitment, emotional connectedness, reciprocal dialogue, congeniality, and love (McAdams, 1980). The need for intimacy expresses itself as a growth-oriented motive (the growth opportunity is enriching one's relationships). In the words of Abraham Maslow (1987), the need for affiliation revolves around "deprivation-love," whereas the need for intimacy revolves around "being-love."

Fear and Anxiety

Social isolation and fear-arousing conditions are two situations that increase a person's desire to affiliate with others (Baumeister & Leary, 1995; Schachter, 1959). Under conditions of isolation and fear, people report being jittery and tense, feeling as if they are suffering and are in pain, and seeing themselves as going to pieces. To reduce such

anxiety and fear, humans typically adopt the strategy of seeking out others (Rofé, 1984). When afraid, people desire to affiliate for emotional support and to see how others handle the emotions they feel from the fear object. For example, imagine camping out in the wilderness and hearing a sudden, loud noise in the middle of the night. The sudden, unexplained noise might produce fear. While feeling fear and anxiety, people seek out others, partly to see if others seem as afraid and partly to gain emotional and physical support. Having other people around while anxious is comforting, but our confidants can be practical allies as well, at least to the extent that they can help us clarify the threatening situation, provide coping strategies, and help carry out our attempts at coping (Kirkpatrick & Shaver, 1988; Kulik, Mahler, & Earnest, 1994). The popularity of mutual support groups, for example, people with alcoholism, unwed mothers, patients suffering a particular illness, and people facing particular adjustment problems, provides some confirming testimony to the human tendency to seek out others when one is afraid or anxious.

Establishing Interpersonal Networks

In an apparent effort to initiate new friendships, people with a high need for intimacy typically join social groups, spend time interacting with others, and when friendships are started, form stable, long-lasting relationships, compared to people with a low need for intimacy (McAdams & Losoff, 1984). As relationships develop, high-need intimacy individuals come to know more personal information and history about their friends (McAdams, Healy, & Krause, 1984; McAdams & Losoff, 1984). And they report being more and more satisfied as their relationships progress, whereas individuals with a low need for intimacy report being less and less satisfied with their developing relationships (Eidelson, 1980). Individuals with a high need for intimacy perceive the tightening bonds of friendship as need involving and as emotionally satisfying, whereas those with a low-need intimacy perceive the tightening bonds of friendship as stifling and as an entrapment.

Maintaining Interpersonal Networks

Once a relationship has been established, individuals with a high need for affiliation strive to maintain those relationships by making more telephone calls, writing more letters, and paying more visits to their friends than do those with a low need for affiliation (Lansing & Heyns, 1959). Those with a high need for intimacy also spend more time in telephone conversations (Boyatzis, 1972) and more time writing letters and participating in face-to-face conversations, compared to those with a low need for intimacy (McAdams & Constantian, 1983).

One study asked persons with high and low needs for intimacy to keep a logbook over a 2-month period on which they were to record 10 20-minute friendship episodes (McAdams, Healy, & Krause, 1984). Those with a high need for intimacy reported more dyadic (vs. larger group) friendship episodes, more self-disclosure, more listening, and more trust and concern for the well-being of their friends. Even when thinking and talking about strangers, high-intimacy-need persons treat others differently than do low-intimacy-need persons, as they use more positive adjectives when describing others

and they avoid talking about others in negative terms (McClelland, Constantian, Pilon, & Stone, 1982).

During face-to-face interactions, high-intimacy-need persons laugh, smile, and make eye contact more frequently than do low-intimacy-need persons (McAdams, Jackson, & Kirshnit, 1984). Such laughing, smiling, and looking lead others to rate high-intimacy-need persons as relatively warm, sincere, and loving human beings (McAdams & Losoff, 1984).

Conditions That Satisfy the Affiliation and Intimacy Needs

Because it is largely a deficit-oriented motive, the need for affiliation, when satisfied, brings out emotions like relief rather than joy. When interacting with others, people high in the need for affiliation go out of their way to avoid conflict (Exline, 1962), avoid competitive situations (Terhune, 1968), are unselfish and cooperative (McAdams, 1980), avoid talking about others in a negative way (McClelland, 1985), and resist making imposing demands on others (McAdams & Powers, 1981). High-affiliation-need individuals prefer careers that provide positive relationships and support for others (the helping professions; Sid & Lindgren, 1981), and they perform especially well under conditions that support their need to be accepted and included (McKeachie, Lin, Milholland, & Isaacson, 1966). When told that others will be evaluating them, high-affiliation-need people experience relatively high levels of anxiety via a fear of rejection (Byrne, 1961). Social acceptance, approval, and reassurance constitute the need-satisfying conditions for people high in the need for affiliation.

Because it is largely a growth-oriented motive, people satisfy the need for intimacy through achieving closeness and warmth in a relationship. Hence, people high in the need for intimacy more frequently touch others (in a nonthreatening way; McAdams & Powers, 1981), cultivate deeper and more meaningful relationships (McAdams & Losoff, 1984), find satisfaction in listening and in self-disclosure (McAdams, Healey, & Krause, 1984), and look, laugh, and smile more during interactions (McAdams, Jackson, & Kirshnit, 1984). Relatedness within a warm, close, reciprocal, and enduring relationship constitutes the need-satisfying condition for people high in the need for intimacy.

POWER

The essence of the need for power is a desire to make the physical and social world conform to one's personal image or plan for it (Winter & Stewart, 1978). People high in the need for power desire to have "impact, control, or influence over another person, group, or the world at large" (Winter, 1973).

Impact allows power-needing individuals to establish power.

Control allows power-needing individuals to maintain power.

Influence allows power-needing individuals to expand or restore power.

Such power strivings often center around a need for dominance, reputation, status, or position. High-power-need individuals seek to become (and stay) leaders, and they interact with others with a forceful, take-charge style. When asked to recall the peak

experiences in their lives, individuals high in the need for power report life events associated with strong positive emotions that occurred as a result of their impact on others, such as being elected to a leadership position or receiving applause from an audience (McAdams, 1982a).

David Winter (1973) provides two scenarios that illustrate power strivings. In the first, research participants watched a film of an authority figure giving an influential speech (John F. Kennedy's presidential inaugural address) and in the second, another set of participants watched a hypnotist ordering students to behave in particular ways as an audience watched. After these experiences, Winter scored the arousal of their power strivings. As expected, these groups scored higher in power strivings (by writing stories rich in power-related imagery) than did a comparison group who did not view the film or hypnosis session (Winter, 1973).

Others have performed experiments that essentially replicated this procedure, but in addition to measuring power strivings, they added measures of mood and physiological arousal (Steele, 1977). As high-power-need individuals listened to inspirational speeches, their moods became significantly more lively and energetic and their physiological arousal (measured by epinephrine/adrenaline) showed a striking increase. Based on these findings, the opportunity to involve one's power strivings fills the power-needing individual with a vigor that can be measured via fantasy, mood, and psychophysiological activation (Steele, 1977).

Conditions That Involve and Satisfy the Need for Power

Four conditions are noteworthy in their capacity for involving and satisfying the need for power: leadership aggressiveness, influential occupations, and prestige possessions.

Leadership and Relationships

People with a high need for power seek recognition in groups and find ways for making themselves visible to others, apparently in an effort to establish influence (Winter, 1973). Power-seeking college students, for example, write more letters to the university newspaper, and power-seeking adults willingly take risks in achieving public visibility (McClelland & Teague, 1975; McClelland & Watson, 1973). They argue more frequently with their professors, and they show an eagerness in getting their points across in the classroom (Veroff, 1957). In selecting their friends and coworkers, power-striving individuals generally prefer others who are in a position to be led (Fodor & Farrow, 1979; Winter, 1973). When hanging out with their friends, they prefer small groups over dyads, and they adopt an interpersonal orientation that takes on more of a tone of influence than it does a tone of intimacy (McAdams, Healey, & Krause, 1984).

In dating relationships, high-power-need men generally fare poorly (Stewart & Rubin, 1976). And they fare no better in marriage, as they generally make poor husbands, at least from the spouse's point of view (McClelland, 1975). In both dating and marriage, high-power-need women do not suffer the same poor outcomes that men do, apparently because they resist using interpersonal relationships as an arena for satisfying their power needs (Winter, 1988).

To test the influence of the need for power on tendencies toward leadership, experimenters arranged to have a group of strangers interact with each other for a short time

(Fodor & Smith, 1982; Winter & Stewart, 1978). Power-seeking individuals talked more and were judged to have exerted more influence. However, the power-seeking individuals were not the best liked, nor were they judged to have contributed the most to getting the job done or for coming to a satisfactory conclusion. In fact, groups that had high-power-need leaders were the ones that produced the poorest decisions. These groups exchanged less information, considered few alternative strategies, and reached poorer final decisions than did groups with a leader low in the need for power. These findings suggest that power-seeking leaders attempt to make others follow their personal plan, even though their assertiveness is often detrimental to group functioning.

Aggressiveness

If the need for power revolves around desire for impact, control, and influence, aggression ought to be one means for both involving and satisfying power needs. To some extent, the relationship between the need for power and aggression holds true, as men high in power strivings get into more arguments and participate more frequently in competitive sports (McClelland, 1975; Winter 1973). However, the relationship between the need for power and aggression is diluted because society largely controls and inhibits people's acts of overt aggression. For this reason, aggressive manifestations of the need for power largely express themselves as impulses to (rather than actual acts of) aggression. Males and females with high needs for power report significantly more impulses to act aggressively (McClelland, 1975). When asked, "Have you ever felt like carrying out the following: yelling at someone in traffic, throwing things around the room, destroying furniture or breaking glassware, or insulting clerks in stores?" individuals high in the need for power report significantly more impulses to carry out these acts (Boyatzis, 1973).

Societal inhibitions and restraints largely constrain the power-seeking person's expression of aggression, but when societal inhibitions are removed, high-power-need men are more aggressive than are their low-power-need counterparts (McClelland, 1975; McClelland, Davis, Kalin, & Wanner, 1972; Winter, 1973). Alcohol is one socially acceptable means of gaining a release from societal inhibitions, and power-seeking men do indeed act relatively more aggressively after drinking (McClelland et al., 1972). Alcohol also likely contributes to individuals' aggressiveness by making them feel more powerful. Similarly, because men get feelings of power from drinking, men with the highest need for power drink the most (McClelland et al., 1972). When life becomes stressful and frustrating, high-power-need individuals sometimes seek alcohol as a means for inflating their sense of control (Cooper, Frone, Russell, & Mudar, 1995). Similarly, power-seeking men, but not power-seeking women, frequently respond to stress and setbacks by inflicting abuse on their intimates (Mason & Blankenship, 1987). This research suggests that people can not only increase power through reputation, prestige, and leadership, but they can also create the perception of heightened power through strategies such as drinking alcohol, risk-taking, gesturing and posturing, using abusive language, using drugs, and driving very fast.

Influential Occupations

People high in the need for power are attracted to occupations such as business executives, teachers/professors, psychologists, journalists, clergy, and international diplomats

(Winter, 1973). Each of these occupations shares a common denominator in that the person in the occupational role is in the position to direct the behavior of other people in accordance with some preconceived plan (Winter & Stewart, 1978). People in some of these professions speak to and influence audiences (teachers, journalists, clergy), others have inside information they use to influence others (psychologists, diplomats), while others have a professional status that allows them to tell others what to do (business executives). Furthermore, these careers equip the individual with the rewards and punishments necessary for sanctioning the behavior of others. The teacher, cleric, diplomat, journalist, and business executive, for instance, all have the means for rewarding and punishing other people's compliance or disobedience (through grades, heavenly rewards, deal making, articles, and salaries). Thus, people can involve and satisfy their power strivings through the job they choose.

Prestige Possessions

People high in the need for power tend to amass a collection of power symbols, or "prestige possessions" (Winter, 1973). Among college students, individuals high in the need for power are more likely than others to possess a car, wine glasses, a television set, a stereo, wall hangings, carpeting, and so on. They are also more likely to put their name on their dormitory room door. Older, power-seeking individuals are more likely to own a rifle or pistol, a convertible car, or a truck that exudes status and power (McClelland, 1975).

Power and Goal Pursuit

Individuals high in the need for power more readily acquire the goals and outcomes they seek than do individuals low in the need for power (Guinote, 2007). Power increases approach tendencies and decreases inhibitory tendencies (Anderson & Berdahl, 2002). High power and taking action go together (Galinsky, Gruenfeld, & Magee, 2003). During negotiations for instance, high power individuals are more likely to express anger, and this strategy often gets them what they want, largely because they are seen as tough negotiators who win concessions from others (Sinaceur & Tiedens, 2006).

Leadership Motive Pattern

A special variant of the need for power is the leadership motive pattern (McClelland, 1975, 1985; McClelland & Burnham, 1976; Spangler & House, 1991). Leadership motivation consists of a threefold pattern of needs: (1) high need for power, (2) low need for intimacy/affiliation, and (3) high inhibition (McClelland, 1982). Thus, the leadership motive pattern features individuals who desire to exercise influence, are not concerned with being liked, and are well controlled or self-disciplined. For instance, the stereotypical military commander or traditional father figure fits this leadership motive pattern rather well.

Such a constellation of high power, low affiliation, and self-control generally results in effective leaders and managers (Spangler & House, 1991). The characteristic of an

internal controlling style (i.e., high inhibition) is important because managers who are high in power, low in affiliation, and high in inhibition are generally productive, successful, and rated highly by workers (McClelland & Burnham, 1976). In contrast, managers who are high in power, low in affiliation, but low in inhibition are often unsuccessful and rated lowly by workers. Apparently, an internal controlling style leads power-striving managers to internalize characteristics associated with effective management: respect for institutional authority, discipline, and self-control (McClelland, 1975, 1985). So, if one is to be an effective leader, power strivings need to be complimented by self-disciplined inhibition (i.e., power under control).

Effectiveness of U.S. Presidents

The leadership motive provides a framework for assessing the effectiveness of U.S. presidents (Spangler & House, 1991; Winter, 1973, 1987). Winter (1973, 1987) coded the thematic content of each president's inaugural address for the social needs of achievement, affiliation, and power and used these scores to predict presidential effectiveness. Presidents generally considered strong by historians—Kennedy, Truman, Wilson, and both Roosevelts—scored relatively high on power needs and relatively low on affiliation needs.

Five variables defined presidential effectiveness: direct presidential actions (e.g., entering and avoiding war), perceived greatness, performance on social issues, performance on economic issues, and international relations. To assess each president's needs for power, affiliation, and inhibition, the researchers coded their inaugural speeches, presidential letters, and other speeches. The leadership motive pattern of high power, low affiliation, and high inhibition correlated significantly with all five measures of effectiveness. Apparently, when the United States elects a candidate with personal dispositions consistent with the leadership motive pattern, the nation is electing someone into office who will probably perform quite well, given the rather unique demands and challenges of the office. So how well or poorly each of the Presidents in Figure 7.4 fared in terms of presidential effectiveness was rooted, in part, in the quality of their leadership motive pattern.

The leadership motive pattern also predicts when leaders will engage in war and when leaders will pursue peace (Winter, 1993). Of course, war has many nonpsychological causes, but on the psychological side, historical research shows that when leaders express a motive profile of high power and low affiliation, the probability of subsequent war increases. Using British history, British–German World War I communications, and U.S.–Soviet communications during the Cuban Missile Crisis as his database, Winter (1993) found that the motive patterns expressed in speeches foreshadow the coming war-versus-peace decisions. When power imagery rose, war became a historically more likely event. When power imagery fell, war was less likely and ongoing wars tended to end. When affiliation imagery rose, war became a historically less likely event. When affiliation imagery fell, war was more likely to begin (Winter, 1993). According to this research, if you want to forecast whether or not a nation will enter into, avoid, or exit a war, read the speeches of the day and look for changes in whether the leaders are promoting influence (power) or relationships (affiliation).



Figure 7.4 Former United States Presidents

SUMMARY

Acquired psychological needs include both quasi-needs and social needs. Quasi-needs are situationally induced wants and desires that arise out of a psychological context of tension and urgency to meet some specific environmental demand, such as needing a high grade point average or needing money. Social needs are more enduring. They arise from the individual's personal experiences and unique developmental, cognitive, and socialization histories. Once acquired, social needs act as emotional and behavioral potentials activated by situational incentives. The need-activating incentive for each of the four social needs are as follows: For achievement, doing something well to show person 1 competence; for affiliation, an opportunity to please others and gain their approval; for intimacy, a warm, secure relationship; and for power, having impact on others.

The need for achievement is the desire to do well relative to a standard of excellence. When facing standards of excellence, people's emotional reactions vary. High need for achievement individuals generally respond with approach-oriented emotions (e.g., hope) and behaviors, whereas low need for achievement individuals (high fear of failure) generally respond with avoidance-oriented emotions (e.g., anxiety) and behaviors. High-need achievers therefore choose moderately difficult tasks, quickly engage in achievement-related tasks, put forth more effort and perform better on moderately difficult tasks, persist in the face of difficulty and failure, and take a personal responsibility for successes and failures. The dynamics-of-action model adds that any stream of ongoing achievement behavior is determined not only by the need for achievement (instigation) and fear of failure (inhibition), but also by the achievement behavior itself (consummation).

According to Atkinson's classical model of achievement, behavioral approach versus avoidance is a multiplicative function of the individual's need for achievement, probability of success, and incentive for success (i.e., $Ts = Ms \times Ps \times Is$), as well as the individual's fear of failure, probability of failure, and incentive to avoid failure (i.e., $Taf = Maf \times Pf \times If$). This formula predicts approach versus avoidance behaviors rather well in situations such as moderately difficult tasks, interpersonal competition, and entrepreneurship.

Within an achievement situation, three types of achievement goals exist: performance-approach, performance-avoidance, and mastery. The need for achievement predicts the adoption of performance-approach goals, fear of failure predicts performance-avoidance goals, and high competency expectancies predict mastery goals. Mastery and performance-approach goals are generally associated with achievement and positive outcomes, whereas performance-avoidance goals are not.

Implicit theories reveal whether people think their personal qualities are fixed and enduring (entity theorists) or are malleable and can be increased (incremental theorists). Implicit theorists are important because they predict the type of goals people choose to pursue, as entity theorists generally adopt performance goals whereas incremental theorists adopt learning goals. Entity and incremental theorists also interpret the meaning of effort differently. Entity theorists generally believe that high effort means low ability, whereas incremental theorists generally believe that effort is the means by which learning occurs and skills develop. When facing difficult tasks or negative feedback, incremental theorists show the relatively more adaptive motivational style in terms of effortful and persistent work.

Affiliation strivings have two facets: the need for affiliation (rejection anxiety) and the need for intimacy (affiliation interest). The need for affiliation involves establishing, maintaining, and restoring relationships with others, mostly to escape from and to avoid negative emotions such as disapproval and loneliness. The need for intimacy is the social motive for engaging in warm, close, positive interpersonal relationships that produce positive emotions and hold little threat of rejection. Depriving people of the opportunity for social interaction is the principal condition that involves the need for affiliation, and social acceptance, approval, and reassurance constitute its need-satisfying conditions. Engaging in, developing, and maintaining warm, close relationships involve the need for intimacy, and individuals with high intimacy needs are more likely to join social groups, spend time interacting with others and form stable, long-lasting relationships that are characterized by self-disclosure and positive affect expressed through looking, laughing, and smiling. Participating in these warm, reciprocal, and enduring relationships constitutes the condition that satisfies the need for intimacy.

The need for power is the desire for making the physical and social world conform to one's personal image for it. High-power-need individuals strive for leadership and recognition in small groups, experience frequent impulses of aggression, prefer influential occupations, and amass prestige possessions. A special variant of the need for power is the leadership motive pattern, which consists of the threefold pattern of needs involving high need for power, low need for intimacy, and high inhibition. Leaders, managers in the workplace, and U.S. presidents who possess constellations of needs consistent with the leadership motive pattern (high power, low affiliation, high inhibition) generally perform well as leaders and are rated by others as effective.

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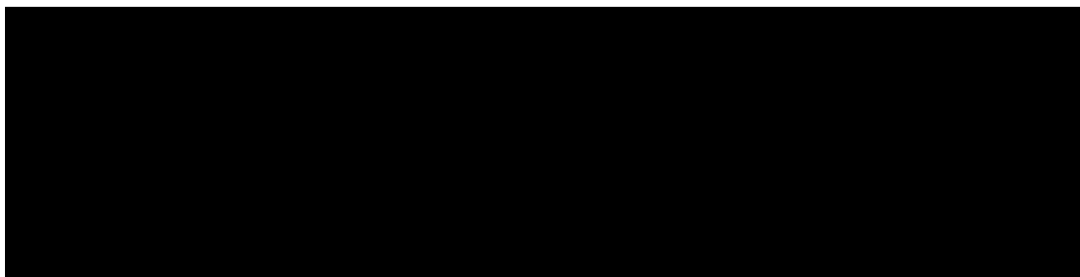
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Chapter 8

Goal Setting and Goal Striving

COGNITIVE PERSPECTIVE ON MOTIVATION

PLANS

Corrective Motivation

Discrepancy

Two Types of Discrepancy

GOAL SETTING

Goal-Performance Discrepancy

Goal Difficulty

Goal Specificity

Difficult, Specific Goals Enhance Performance

Feedback

Goal Acceptance

Criticisms

Long-Term Goal Setting

GOAL STRIVING

Mental Simulations: Focusing on Action

Implementation Intentions

Goal Pursuit: Getting Started

Goal Pursuit: Persisting and Finishing

PUTTING IT ALL TOGETHER: CREATING AN EFFECTIVE GOAL-SETTING PROGRAM

SUMMARY

READINGS FOR FURTHER STUDY

Mirrors don't lie. Lately, your mirror has been saying you added a few pounds. It is time, you decide, to lose 10 pounds and get back on the road to physical fitness. You want to take action, but what? When? How?

Jogging seems sensible, so you start. At first, jogging is new, even fun, as you enjoy the outdoors and sense of accomplishment. A week goes by, but you do not lose much weight. You begin to wonder how much exercise is enough exercise. Another week goes by and the pressures of everyday living increase and compete for your time and attention.

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Each day you find it more difficult to find the time and to mobilize the energy to exercise. After a month of lackluster progress, jogging is history.

A month later, you are strolling in a store and come across a pedometer, a device about the size of a pocket watch that clips to your waistband. Its function is to keep track of how many steps you take during the day. According to the product's packaging, fewer than 5,000 steps means you are sedentary. About 9,000 steps means you are fairly active. To lose weight, you need to take at least 12,000 steps per day.

Now, you have a goal. No longer are you going to "do your best." Now you are going to take 12,000 steps per day. You wake up the next day bent on taking those 12,000 steps, but your schedule and feet protest that 9,000 steps are enough. Because you cannot quite make it to 12,000 steps, you find yourself devising step-increasing strategies (e.g., take 200 steps around your apartment every few hours take a lap around the mall prior to shopping). By the end of the third week, you take the 12,000 steps and feel the warm glow of accomplishment. After a month, you boldly decide to try for 15,000 steps per day. You now have a new goal. It will take more effort, more persistence, and an improved exercise strategy. But because you achieved your earlier goal and because your stamina has increased, you feel up to the lifestyle change. Eagerness has replaced apathy.

Another weight-loss program illustrates these same motivational processes. Dieting is an ambiguous task much in the same way that exercise is an ambiguous task—how much can I eat? Is my goal high enough to matter? How do I know whether or not I am making any progress? In order to translate general, long-term dieting goals into specific day-to-day action, this popular weight loss program recommends each person consume foods within a daily point range, depending on the person's current weight. A daily points goal for a person of 180 pounds might be, for example, between 22 and 27 points. The daily points range is important because all foods have a points value, depending on the food's number of calories, grams of fat, and grams of fiber (e.g., two pancakes = 6 points). The basic idea is that the person starts each day with a "range of points" goal. The dieter is to plan his or her food choices to eat at least the minimum number of points (to maintain metabolism) but no more than the maximum number of points (to lose weight). Vigorous daily activity (exercise) can increase one's daily points range. The idea is to focus not on a vague, ambiguous diet but, instead, to focus on a difficult and specific goal, carefully keep track of food points consumed, and achieve this goal day after day.

COGNITIVE PERSPECTIVE ON MOTIVATION

Cognitions are mental events. Cognitive sources of motivation therefore revolve around a person's ways of thinking and believing. Cognition can be a difficult concept to define (a "messy construct"; Pajaras, 1992, p. 307), as it is an umbrella construct that unites together mental constructs such as beliefs, expectations, goals, plans, judgments, values, and the self-concept under the single banner of mental events that function as causal determinants to action (Gollwitzer & Bargh, 1996). In this section, we investigate the following motivational agents in the cognition → action sequence:

Chapter 8

- Plans (Miller et al., 1960)
- Goals (Locke & Latham, 2002)

- Implementation intentions (Gollwitzer, 1999)
- Mental simulations (Taylor, Pham, Rivkin, & Armor, 1998)

Chapter 9

- Perceived control (Skinner, 1996)
- Self-efficacy (Bandura, 1986)
- Mastery beliefs (Diener & Dweck, 1978)
- Attributions (Weiner, 1986)
- Explanatory style (Peterson & Seligman, 1984)

Chapter 10

- Self-concept (Markus, 1977)
- Possible selves (Markus & Nurius, 1986)
- Self-regulation (Zimmerman, 2000)
- Personal strivings (Sheldon & Elliot, 1999)
- Dissonance (Harmon-Jones & Mills, 1999)
- Values (Brophy, 1999)

As we will see, cognitive mental events such as goals and expectancies can function as a “spring to action,” a moving force that energizes and directs action in purposive ways (Ames & Ames, 1984). The first motivational spring to action studied was the “plan.”

PLANS

The contemporary cognitive study of motivation began in 1960 when a trio of psychologists—George Miller, Eugene Galanter, and Karl Pribram—investigated how plans motivate behavior. According to these pioneers, people have mental representations of the ideal states of their behavior, environmental objects, and events. In other words, people have in mind what an ideal tennis serve looks like (ideal behavior), what an ideal birthday gift would be (ideal environmental object), and what constitutes an ideal night on the town (ideal event). People are also aware of the present state of their behavior, environment, and events. That is, people have the knowledge of their current tennis serve (present behavior), gift (present object), and evening itinerary (present event).

Any mismatch perceived between one’s present state and one’s ideal state instigates an experience of “incongruity,” which has motivational properties. Suffering incongruity, people formulate a plan to remove that incongruity (Miller et al., 1960; Newell, Shaw, & Simon, 1958). Hence, the essential motivational process underlying a plan is as follows: People have knowledge of both their present and ideal states and any perceived incongruity between the two makes people uncomfortable enough to formulate and act on a plan of action to remove the incongruity so that the present state will change and become the ideal state. The incongruity acts as the motivational “spring to action” (provides energy), and the plan becomes the means of organizing our behavior toward the pursuit of the ideal state (provides direction).

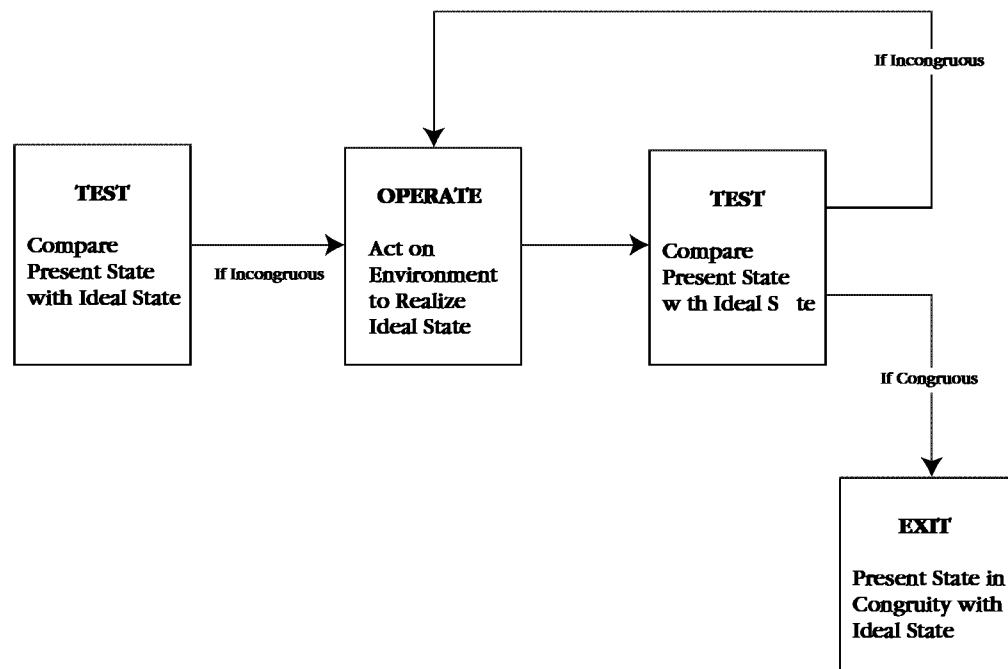


Figure 8.1 Schematic of the TOTE Model

The cognitive mechanism by which plans energize and direct behavior is the test–operate–test–exit (TOTE) model, as illustrated in Figure 8.1 (Miller et al., 1960). *Test* means to compare the present state against the ideal. A mismatch between the two (incongruity) springs the individual into action. That is, the mismatch motivates the individual to *operate* on the environment via a planned sequence of action. That is, when you look in the mirror to check if your hair looks okay, you “test” or compare the way your hair presently looks in the mirror against the way you want your hair ideally to look. If your hair looks okay, you say “fine” and walk away from the mirror. But if you see a mismatch between your present hair and your ideal hair, then it is time to “operate” via a plan of action—you comb your hair, take a shower, use hairspray, or just wear a hat. After a period of action, the person again *tests* the present state against the ideal. If the feedback reveals that the incongruity continues to persist, then the person continues to *operate* on the environment (T-O-T-O-T-O, and so on). In daily life, T-O-T-O-T-O looks like, to continue the bad hair day example: Look in mirror—Comb your hair—Look in the mirror for feedback—Comb your hair some more—Look in the mirror again—Comb your hair some more, and so on. As long as the incongruity persists, action (“operate”) continues. If and whenever the present matches the ideal, the person *exits* the plan.

Consider a second example of the TOTE model. A painter takes an easel to a waterfall, paints the scenery, compares the canvas to the waterfall, and notices that the two are quite dissimilar. Because the canvas does not yet show a satisfactory representation of the waterfall, the painter operates on the painting to reflect on the canvas the ideal picture in her mind. The painter continually compares (tests) the painting on the canvas to its ideal in her mind. As long as incongruity persists, the painting continues (T-O-T-O-T-O, and so on). Only when the actual and ideal paintings match does the painter exit the

plan and cease to paint. The ever-repeated process of comparing the present versus the ideal, followed by incongruity-reducing behavioral adjustments, is a common feature of everyday life.

Overcoming bad hair days and painting waterfalls illustrate the moment-to-moment influence plans have on our motivated behavior—getting started, putting forth effort, persisting over time, and eventually stopping. Dozens of additional illustrations of plans as springs to action are possible, including removing items from a “to do” list, repairing a broken object until it is fixed, driving to a destination, revising a term paper, shopping, saving money for a trip, mowing the lawn, cleaning a sink full of dirty dishes, reading this chapter, and so on.

Plans can also be long term. For instance, how satisfied are you currently with the present state of your career/occupation? Marital status? Capacity to speak a foreign language? Events happen in life that make us aware of the incongruities that exist between our present states and our ideal states. Our friends, for instance, might get an “ideal” job, marriage partner, or opportunity to travel or live abroad. When these incongruities cause enough discomfort to stir us into action (as we say to ourselves, “I want the ideal state more than I want my present state”), we formulate plans of action and start down the road of long-term planning and the energized and directed daily activity that is T-O-T-O-T-O.

Corrective Motivation

The plan → action sequence portrays individuals as (1) detecting present-ideal inconsistencies, (2) generating a plan to eliminate the incongruity, (3) instigating plan-regulated behavior, and (4) monitoring feedback as to the extent of any remaining present-ideal incongruity. Most contemporary researchers (Campion & Lord, 1982; Carver & Scheier, 1981, 1982, 1990, 1998), however, no longer view plans as so fixed, static, and mechanical. Rather, plans are adjustable and subject to revision. Given an incongruity between present and ideal, one’s plan is as likely to change and undergo modification as is one’s behavior. The emphasis on modifiable plans is important because it presents human beings as active decision makers who choose which of the following to follow in a given set of circumstances (Carver & Scheier, 1981, 1982): act (“Operate”) to achieve the ideal state or change and revise an ineffective plan.

From this point of view, any present-ideal incongruity does not instigate an automatic discrepancy-motivated action sequence. Rather, incongruity gives rise to a more general “corrective motivation” (Campion & Lord, 1982).

Corrective motivation activates a decision-making process in which the individual considers many different possible ways for reducing the present-ideal incongruity: change the plan, change behavior (increase effort), or withdraw from the plan altogether. That is, plan-directed behavior is a dynamic, flexible process in which corrective motivation energizes the individual to pursue the most adaptive course. Hence, devising a good plan for removing or reducing incongruity is only the first half of the battle. Actually carrying out the plan is the other half of the battle because people all too often encounter problems (e.g., situational constraints, personal inadequacies) while trying to translate their plans into action. Corrective motivation is therefore a dynamic process of going back and forth between the two points listed above—act to achieve the ideal state but also be ready to change and revise an ineffective plan.

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Corrective motivation also involves emotion (Carver & Scheier, 1990, 1998). When people progress toward their ideal states at rates equal to their expectations, they feel little emotion. When people progress toward their ideal states at slower-than-expected rates, however, the persistent and salient discrepancy produces negative emotions such as anxiety, frustration, or despair. When people progress toward their ideal states at faster-than-expected rates, discrepancy reduction produces positive emotions such as enthusiasm, hope, excitement, and joy. Thus, plans motivate actions, and the person's subsequent evaluations of progress of removing incongruities generate emotions.

Discrepancy

The more cognitive psychologists worked with present state versus ideal state mismatches to study plans and corrective motivation, the more they came to see the larger construct of “discrepancy” as a core motivational construct. The basic idea behind discrepancy (a synonym for “incongruity”) is straightforward and can be represented by the magnitude of the arrow below that shows the difference or mismatch between one's present state and one's ideal state.



Present state represents the person's current status of how life is going. The ideal state represents how the person wishes life was going. When the present state falls short of the hoped-for ideal state, a discrepancy is exposed. It is the discrepancy—rather than the ideal state per se—that has motivational properties. Discrepancy creates the sense of wanting to change the present state so that it will move closer and closer toward the ideal state. Here are 10 everyday illustrations of discrepancies between what currently is (present state) and what we wish would be (ideal state). For instance, people who are stuck in traffic (present state) wish they were instead driving without interference (ideal state), and the awareness of the mismatch creates a want that motivates people to take action necessary to remove the rather bothersome discrepancy.

Present State	Ideal State
Stuck in traffic	Driving without interference
The job you have	The job you want
How skillful you are	How skillful the guy on television is
Current quality of a relationship	How good the relationship could be
Current GPA	GPA needed to make the Dean's List
Messy, cluttered desktop	Clean, well-organized desktop
Suffering headache pain	Not suffering headache pain
Having 200 more miles to drive	Being there
10 laps to run around the track	0 laps to run
200 unread pages in this book	0 unread pages

This list represents a dozen ways for saying essentially the same thing. In these and all other instances of discrepancy, the person envisions possible circumstances that are

different from present circumstances. The awareness of the mismatch between “that which presently is” and “that which is desired” creates a sense of discrepancy or incongruity that produces motivational consequences. Therefore, when people ask themselves, “What can I do to increase motivation?” those who study discrepancy-based motivation have a very practical answer: Basically, create an ideal state in your mind. Or, more precisely, create a present state–ideal state discrepancy.

Two Types of Discrepancy

Two types of discrepancies exist (Bandura, 1990; Carver & Scheier, 1998). The first is *discrepancy reduction*, which is based on the discrepancy-detecting feedback that underlies plans and corrective motivation. Some aspect of the environment (e.g., a boss, scholarship opportunity, athletic opponent) provides feedback about how well or how poorly the person’s current performance level matches up with ideal performance level. For instance, at work, the supervisor might tell the salesperson that 10 sales are not enough; 15 sales are needed. Likewise, a student might read in a brochure that his current 2.0 GPA is not enough for scholarship eligibility; a GPA of 3.0 is needed. In essence, the environment brings some standard of excellence (an ideal state) to the person’s awareness and asks, essentially, “Are you currently performing at this desired level?”

The second type of discrepancy is *discrepancy creation*. Discrepancy creation is based on a “feed-forward” system in which the person looks forward and proactively sets a future, higher goal. The person deliberately sets a higher goal—an ideal state that does not yet exist except in the performer’s mind—and does not require feedback from a boss or a scholarship to impose it. For instance, the salesperson might, for whatever reason, decide to try for 15 sales in one week instead of the usual 10, and the student might decide to try for a 3.0 GPA. Thus, the person proactively creates for him- or herself a new, higher goal to pursue.

In both cases—discrepancy reduction and discrepancy creation—it is the discrepancy (or incongruity) that provides the motivational basis for action. But two important distinctions between discrepancy reduction and discrepancy creation exist: (1) Discrepancy reduction corresponds to plan-based corrective motivation (discussed in the previous section), whereas discrepancy creation corresponds to goal-setting motivation (discussed in the next section); and (2) discrepancy reduction is reactive, deficiency overcoming, and revolves around a feedback system, whereas discrepancy creation is proactive, growth pursuing, and revolves around a “feed-forward” system. As discussed next, goal setting is first and foremost a discrepancy-creating process (Bandura, 1990).

GOAL SETTING

A goal is whatever an individual is striving to accomplish (Locke, 1996). When people strive to earn \$100, make a 4.0 GPA, sell 100 boxes of Girl Scout cookies, or go undefeated in an athletic season, they engage in goal-directed behavior. Like plans, goals generate motivation by focusing people’s attention on the discrepancy (or incongruity) between their present level of accomplishment (no boxes of cookies sold) and their

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ideal level of accomplishment (100 boxes sold by the end of the month). Researchers refer to this discrepancy between present level of accomplishment and ideal level of accomplishment as a “goal–performance discrepancy” (Locke & Latham, 1990).

Goal–Performance Discrepancy

Generally speaking, people with goals outperform those without goals (Locke, 1996; Locke & Latham, 1990, 2002). And generally speaking, the same person performs better when she has a goal than when she does not have a goal. So people who create goals for themselves and people who accept the goals others set for them perform better than those who do not create or accept such goals.

Consider one study in which elementary grade students performed sit-ups for 2 minutes (Weinberg, Bruya, Longino, & Jackson 1988). Some students set a goal for themselves as to how many sit-ups they would accomplish during the 2 minutes (goal-setting group), while others simply completed sit-ups without a predetermined goal (no-goal group). After 2 minutes of exercise, the goal-setting students completed significantly more sit-ups than did the no-goal students. In effect, the presence of a goal motivated exercisers more than did the absence of a goal. The first group of elementary-grade students were not any healthier or athletic than the other group of students. Instead, the presence of a goal energized and directed their sit-up performance in a way that the absence of a goal did not.

The same facilitating effect that goal–performance discrepancies have on people’s subsequent performances can be found in any number of other studies, as people with goals outperform people without goals, such as in trying to lift weights, learn text information, sell products, shoot archery, conserve natural resources, and lose weight (see Locke & Latham’s [1990] Table 2.5, which lists 88 different tasks in which goal–performance discrepancies lead to enhanced performance). As a point of illustration, loggers with goals cut more trees than do loggers without goals (Latham & Kinne, 1974), word-processing operators with goals typed more and faster than did word-processing operators without goals (Latham & Yukl, 1976), and truck drivers with goals increased the number of trips they made each day relative to truck drivers with no goals (Latham & Baldes, 1975).

Goal setting generally enhances performance, but the type of goal one sets is a key determinant in the extent to which a goal translates into performance gains, as goals vary in how difficult they are and in how specific they are.

Goal Difficulty

Goal difficulty refers to how hard a goal is to accomplish. As goals increase in difficulty, performance increases in a linear fashion (Locke & Latham, 1990; Mento, Steel, & Karren, 1987; Tubbs, 1986). Relative to goals such as scoring 80 on a test, running a mile in 10 minutes, and making one new friend at a social event, more difficult goals would be scoring 90 on a test, running a mile in 8 minutes, and making two new friends. The more difficult the goal, the more it energizes the performer. This is so because people exert effort in proportion to what the goal requires of them. That is, easy goals stimulate little effort, medium goals stimulate moderate effort, and difficult goals stimulate high effort (Earley, Wojnarowski, & Prest, 1987; Locke & Latham, 1984, 1990, 2002). Effort

responds to the magnitude of goal difficulty, which is to say that effort responds to the magnitude of the goal–performance discrepancy.

Goal Specificity

Goal specificity refers to how clearly a goal informs the performer precisely what he is to do. Telling a performer to “do your best” sounds like goal setting, but it is actually only an ambiguous statement that does not make clear precisely what the person is to do (Locke & Latham, 1990). On the other hand, telling a writer to have a first draft in 1 week, a revised draft in 2 weeks, and a final manuscript in 3 weeks specifies more precisely what the writer is to do and when she is to do it. Translating a vague goal into a specific goal typically involves restating the goal in numerical terms. Goal specificity is important because specific goals draw attention to what one needs to do and reduces ambiguity in thought and variability in performance (Klein, Whitener, & Ilgen, 1990; Locke, Chah, Harrison, & Lustgarten, 1989). As to ambiguous thought, a vague goal such as “study hard” might be interpreted as “read the chapter” by one student but as “read the chapter, take notes, review it, and form a study group to discuss it” by a second student. As to variable performance, a vague goal (e.g., “work quickly” or “read a lot”) produces a relatively wide range of performances compared to giving a group of performers a specific goal (e.g., “complete the task in the next 3 minutes” or “read 100 pages”), which produces a relatively narrow range of performances that all hover around the goal level (Locke, Shaw, Saari, & Latham, 1989).

Difficult, Specific Goals Enhance Performance

Goals do not always enhance performance. Only those goals that are difficult and specific do so (Locke et al., 1981). The reason difficult, specific goals increase performance while easy and vague ones do not is a motivational reason. Difficult goals *energize* the performer, and specific goals *direct* her toward a particular course of action (Earley et al., 1987). Therefore, goals need to be difficult to create energy, and goals need to be specific to focus direction.

Difficult goals energize behavior, which is to say that they increase the performer’s effort and persistence. Output of effort is directly proportional to the perceived demands of the task (Bassett, 1979; Locke & Latham, 1990). The harder the goal, the greater the effort expended in accomplishing it (Earley et al., 1987; Bandura & Cervone, 1983, 1986). Difficult goals increase persistence because effort continues and continues until the goal is reached (LaPorte & Nath, 1976; Latham & Locke, 1975). The athlete trying for 45 sit-ups, for example, keeps performing sit-up after sit-up until all 45 are done. Goals also decrease the probability that the performer will be distracted away from the task or will give up prematurely (LaPorte & Nath, 1976). The exerciser with the “45 sit-ups” goal is more likely to keep going past 30, 35, and 40 sit-ups than is the exerciser with a lesser goal or with a “do my best” goal. With a goal in mind, performers quit the task when the goal is accomplished, not when they get bored, frustrated, tired, or distracted.

Specific goals direct attention and strategic planning. Specific goals focus the individual’s attention toward the task at hand and therefore away from tasks that are incidental

(Kahneman, 1973; Locke & Bryan, 1969; Rothkopf & Billington, 1979). Goals tell the performer where to concentrate and what specifically to do (Klein et al., 1990; Latham, Mitchell, & Dossett, 1978; Locke et al., 1989). In studies with students reading texts, for instance, readers with specific goals spent significantly more time looking at their text during a study session than did readers with ambiguous goals, who were more likely to let their eyes wander around the room (Locke & Bryan, 1969; Rothkopf & Billington, 1979). Specific goals also prompt performers to plan a strategic course of action (Latham & Baldes, 1975; Terborg, 1976), and specific goals lead people to use their task knowledge and strategies (Smith, Locke, & Barry, 1990). The weight loss program discussed earlier illustrates this point as the dieter needs to invest a good deal of knowledge and deliberate planning into the creation of a strategic plan if he or she is going to successfully limit the day's food intake to 25 points. Also, with a specific goal in mind, a performer who is unable to accomplish a goal on a first attempt will tend to drop that strategy and revise it by creating a new and improved strategy (Earley & Perry, 1987; Earley et al., 1987).

The role that goal difficulty and goal specificity play in removing goal–performance discrepancies appears in Figure 8.2. People raise their level of performance up to their sought-after goal levels because difficult goals energize effort and persistence while specific goals direct on-task attention and strategic planning.

Goals generate motivation, but motivation is only one of the causes underlying performance. Performance also depends on factors that are not motivational, such as ability, training, coaching, and resources (Locke & Latham, 1984). Because these factors also contribute to the quality of performance, no one-to-one correspondence exists between goals and performance. Thus, if two performers have comparable ability, training, coaching, and resources, then performers with difficult and specific goals will likely outperform performers without such goals. This is an important practical point because when difficult, specific goals fail to enhance performance, one might be well advised to focus on factors

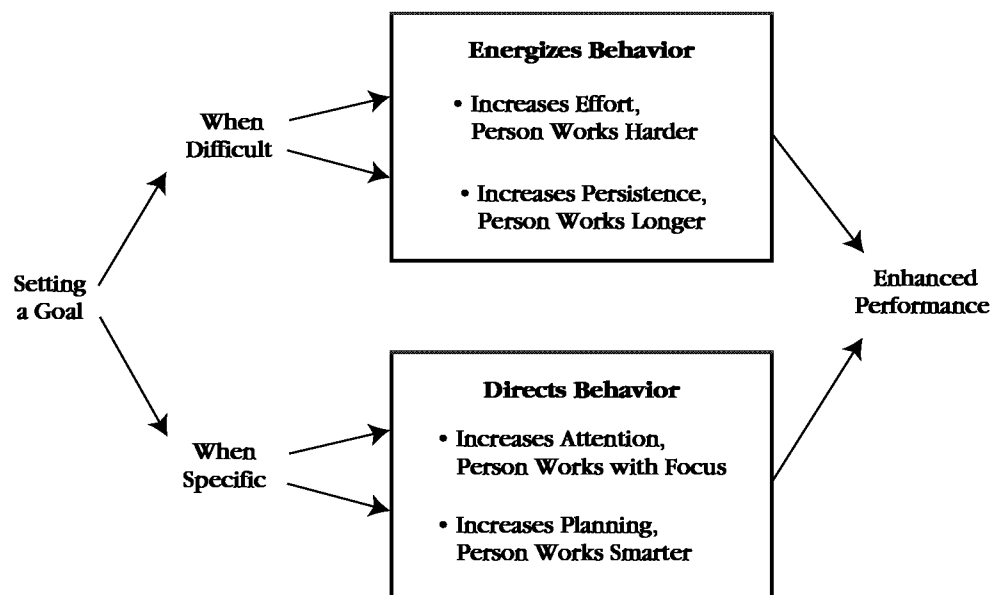


Figure 8.2 How Difficult and Specific Goals Raise Performance to Remove Goal–Performance Discrepancies

that are not motivational and that relate to increasing ability (via instruction, practice, role models, videotaped-performance feedback) or resources (via supplying equipment, books, tutors, computers, money).

Feedback

Difficult, specific goals enhance performance by energizing effort and persistence and by directing attention and strategy. One additional variable is crucial in making goal setting effective: feedback (Erez, 1977). Goal setting translates into increased performance only in the context of timely feedback that documents the performer's progress in relation to the goal (Locke et al., 1981). Feedback, or knowledge of results, allows people to keep track of any progress toward their goal. In other words, a performer needs both a goal *and* feedback to maximize performance (Bandura & Cervone, 1983; Becker, 1978; Erez, 1977; Strang, Lawrence, & Fowler, 1978; Tubbs 1986).

Without feedback, performance can be emotionally unimportant and uninvolved. A runner can have a goal to run a mile in 6 minutes, a dieter can have a goal to lose 10 pounds, and a student can have a goal of mastering a subject matter. But if the runner, dieter, and student never gain access to a stopwatch, scale, or examination, respectively, then all the running, dieting, and studying have no way for informing the performer of his or her progress toward goal attainment.

But feedback is just information. Just as the goal needs feedback to diagnose progress, the reverse is also true that feedback needs a goal (a standard of performance). It is only within the context of a goal that one can utilize feedback information to judge one's performance as poor (below goal), okay (at goal), or excellent (above goal).

The combination of goals with feedback produces an emotionally meaningful mixture: Goal attainment breeds emotional satisfaction, while goal failure breeds emotional dissatisfaction (Bandura, 1991). Both satisfaction and dissatisfaction have motivational properties. Felt satisfaction contributes favorably to the discrepancy-creating process. When feedback shows the individual that he or she is performing at or above goal level, the individual feels satisfied and competent, competent enough perhaps to create a higher, more difficult goal (the discrepancy-creation process; Wood, Bandura, & Bailey, 1990). Felt dissatisfaction contributes favorably to the discrepancy-reducing process (Matsui, Okada, & Inoshita, 1983). When performance feedback shows the individual that he or she is performing below goal level, the individual feels dissatisfied and becomes keenly aware of the goal-performance discrepancy, enough perhaps to marshal greater effort toward eliminating the goal-performance incongruity (the discrepancy-reduction process; Bandura & Cervone, 1983, 1986). Feedback therefore provides the emotional punch that continually bathes the goal-setting process within emotional experiences of felt satisfaction and felt dissatisfaction.

The core motivational elements of the goal-setting process appear in summary form in Figure 8.3. The lefthand side of the figure explains why goals enhance performance—namely, because people with goals work harder, longer, smarter, and with more focus (i.e., increased effort, persistence, strategic planning, and attention). The righthand side explains the motivational process that arises out of feedback in one's progress to remove the goal-performance discrepancies (i.e., discrepancy reduction, new discrepancy creation).

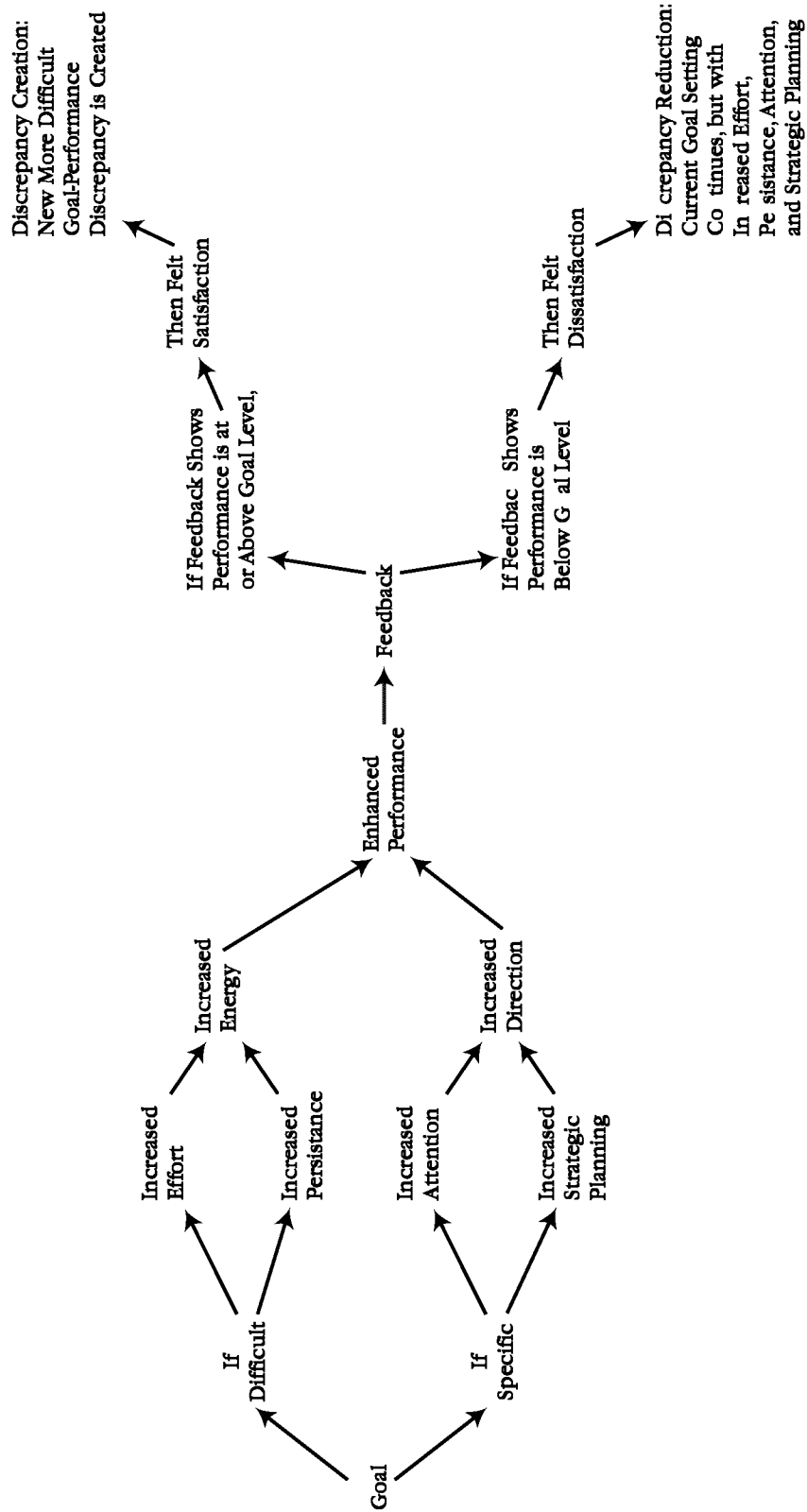


Figure 8.3 Summary of the Goal-Setting Process

Goal Acceptance

In addition to goals needing to be (1) difficult and specific and (2) coupled with feedback, a third condition is necessary before goals translate into performance gains: goal acceptance (Erez & Kanfer, 1983). Goal acceptance is a critical variable when goal setting takes place within the context of an interpersonal relationship in which one person attempts to provide another person with a goal. For instance, a coach might ask an athlete to run 2 miles in 12 minutes, a parent might ask a child to wash the dishes each Monday evening, or a priest might ask parishioners to tithe 10% of their income to the church. Goal acceptance involves the person's decision either to accept or reject the goal. It varies on a continuum from total acceptance of the externally imposed goal to total rejection (Erez & Kanfer, 1983; Erez & Zidon, 1984). Only internalized (i.e., accepted) goals improve performance (Erez, Earley, & Hulin, 1985). They do so because goal acceptance breeds goal commitment.

If the person fully accepts another person's externally imposed goal ("Okay, coach, I'll do it, I will run 2 miles in 12 minutes"), the goal-setting process illustrated in Figure 8.3 proceeds as diagrammed (Erez & Zidon, 1984). If the goal is rejected, however, the goal-setting process does not proceed as diagrammed and, in fact, a negative relationship often exists between the externally imposed (and rejected) goal and the person's ensuing performance.

Four factors determine whether an externally set goal will be accepted or rejected:

- Perceived difficulty of the imposed goal
- Participation in the goal-setting process
- Credibility of the person assigning the goal
- Extrinsic incentives

As to the perceived difficulty of the imposed goal, goal acceptance is inversely related to goal difficulty. As the person contemplates whether or not to accept the imposed goal, he or she first evaluates its perceived difficulty. Easy-to-accomplish goals generally breed goal acceptance whereas difficult goals breed goal rejection (Erez et al., 1985). When parents tell their child to bring home a report card with all As, for instance, the child evaluates the likelihood of attaining such a goal before accepting it. When the imposed goal is perceived to be relatively easy, the student will tend to think, "Okay, that's reasonable; I'll give it a try." When the imposed goal is perceived to be quite difficult, the student will tend to think, "Ugh... oh, that's impossible; I won't even try."

The second factor that affects goal acceptance is the extent to which the performer participates in the goal-setting process. Participation refers to how much say (input) the performer has in the goal he or she is to pursue. If the performer sets the goal him- or herself, it is readily accepted. With an externally imposed goal, however, an interpersonal negotiation process needs to ensue in which the performer's goal acceptance is at stake. In general, performers reject goals that others try to force on them (Latham & Yukl, 1975), but they accept assigned goals when others listen carefully to their point of view and also provide a clear rationale for why they think the goal is a good idea (Latham, Erez, & Locke, 1988; Latham & Saari, 1979).

Credibility of the person assigning the goal refers to how trustworthy, supportive, knowledgeable, and likeable the performer perceives this person to be. A person with little

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credibility comes across as authoritarian, manipulative, and pejorative when assigning goals. All other things being equal, performers are more likely to accept and internalize goals assigned to them by credible others who have the performer's well-being in mind (Locke & Latham, 1990; Oldham, 1975). In the world of work, one way workplace leaders increase their credibility to workers is by providing a compelling vision for the future of the company (Turner, Barling, & Zacharatos, 2002).

When extrinsic incentives and rewards are contingent on goal attainment, a performer's goal acceptance increases in proportion to the perceived benefits of attaining the goal (Locke & Latham, 1990). Incentives such as money, public recognition, and scholarships contribute positively to a performer's willingness to accept a goal regardless of its difficulty, origin, or the credibility of the person assigning the goal. Overall, goal acceptance is highest when goals are perceived to be easy or only moderately difficult, are self-set (or are at least negotiated to the performer's satisfaction), are assigned by credible and trustworthy others, and promise for becoming personal benefit.

Criticisms

Goal setting has its advantages, but it also has its cautions and pitfalls (Locke & Latham, 1984).

Goal-setting theory (Locke & Latham, 1990, 2002) developed within the fields of business, management, the world of work, sales, and the bottom line (profit). Goal-setting theory is therefore more about enhancing performance (worker output) than it is about enhancing motivation *per se*. Hence, the first caution associated with goal setting is that its purpose is to enhance performance, not necessarily motivation. The second caution is that goal setting works best when tasks are relatively uninteresting and require only a straightforward procedure (Wood, Mento, & Locke, 1987), as shown with tasks such as adding numbers (Bandura & Schunk, 1981), typing (Latham & Yukl, 1976), proofreading (Huber, 1985), assembling nuts and bolts (Mossholder, 1980), and sit-ups (Weinberg, Bruya, & Jackson, 1985). Goal setting aids performance on uninteresting, straightforward tasks by generating motivation that the task itself cannot generate (because it is so boring on its own). On tasks that are inherently interesting and require creativity or problem solving, goal setting does not enhance performance (Bandura & Wood, 1989; Earley, Connolly, & Ekegren, 1989; Kanfer & Ackerman, 1989; McGraw, 1978).

Goal setting is associated with three pitfalls that limit its utility in applied settings—namely, stress, opportunities for failure, and putting creativity and intrinsic motivation at risk. The logic behind goal setting is to increase performance demands so the performer's effort, persistence, attention, and strategic planning improve from lackluster to more engaged. Sometimes, however, overly challenging goals ask performers to perform at a level that exceeds their capabilities and produce stress (Csikszentmihalyi, 1990; Lazarus, 1991a). Difficult goals also create an explicit, objective performance standard and therefore open the door to the possibility of failure. Failure feedback yields distressing consequences that are emotional (e.g., feelings of inadequacy), social (e.g., loss of respect), and tangible (e.g., financial). The third pitfall is that goals are sometimes administered in ways that are controlling, pressure-inducing, and intrusive and thus can undermine creativity and intrinsic motivation by interfering with one's autonomy, cognitive flexibility, and personal passion for work (Amabile,

1998; Harackiewicz & Manderlink, 1984; Hennessey & Amabile, 1998; Mossholder, 1980; Vallerand, Deci, & Ryan, 1985).

Long-Term Goal Setting

A student who wants to become a doctor or an athlete who wants to win an Olympic event exemplify individuals involved in long-term goal setting. To accomplish a distant goal, the performer first has to attain several requisite short term goals. Would-be doctors first have to make a high GPA as undergraduates, get accepted into a medical school, raise or borrow a great deal of money, probably move to a different city, graduate from medical school, complete an internship, join a hospital or partnership, and so forth, all before they can begin their careers as doctors. Thus, goals can be short term or long term, or a series of short-term goals linked together into one long-term goal. No significant difference in performance emerges among performers with short-term, long-term, or a mixture of short- and long-term goals (Hall & Byrne, 1988; Weinberg, Bruya, & Jackson, 1985; Weinberg et al., 1988), though all outperform people with no goals.

Instead of affecting performance *per se*, goal proximity affects persistence and intrinsic motivation. As for persistence, many would-be doctors and Olympians eventually forfeit their long-term goals because of a lack of positive reinforcements along the way. During all those years of studying and practicing, the long-term goal of actually being a doctor or Olympian never materializes. Because the long-term goal striver receives insufficient opportunities for performance feedback and positive reinforcement, his or her persistence would benefit from setting a series of short-term goals that chain together to eventually end in the long-term target goal. Short-term goals provide repeated commitment-boosting opportunities for reinforcement following goal attainment that long-term goals cannot provide (Latham et al., 1978). Short-term goals also provide repeated opportunities for feedback that allows the performer to evaluate performance as being at, above, or below the goal. An athlete trying for a long-term goal such as winning the state championship receives little day-to-day feedback as compared to the athlete trying for a short-term goal such as winning a contest each week.

Several researchers assessed the impact that short- and long-term goals have on intrinsic motivation (Bandura & Schunk, 1981; Harackiewicz & Manderlink, 1984; Mossholder, 1980; Vallerand et al., 1985). On uninteresting tasks, short-term goals create opportunities for positive feedback, the experience of making progress, and a means of nurturing a sense of competence, all of which enhance intrinsic motivation (Vallerand et al., 1985). On interesting tasks, however, only long-term goals facilitate intrinsic motivation. For the highly interested performer, short-term goals are experienced as superfluous, intrusive, and controlling. In contrast, people prefer to pursue long-term goals in their own way, and this sense of autonomy explains why long-term goals can increase intrinsic motivation (Manderlink & Harackiewicz, 1984; Vallerand et al., 1985).

One final point on long-term goals is that they typically exist as complex cognitive structures (Ortony, Clore, & Collins, 1988). Short-term goals can be thought of as specific behavioral targets, such as to lose 5 pounds, to find a job, or to make 10 consecutive free throws. To think of long-term goals as cognitive lattice structures, however, Figure 8.4 illustrates the long-term goal of an aspiring concert pianist (Ravlin, 1987). At the top of

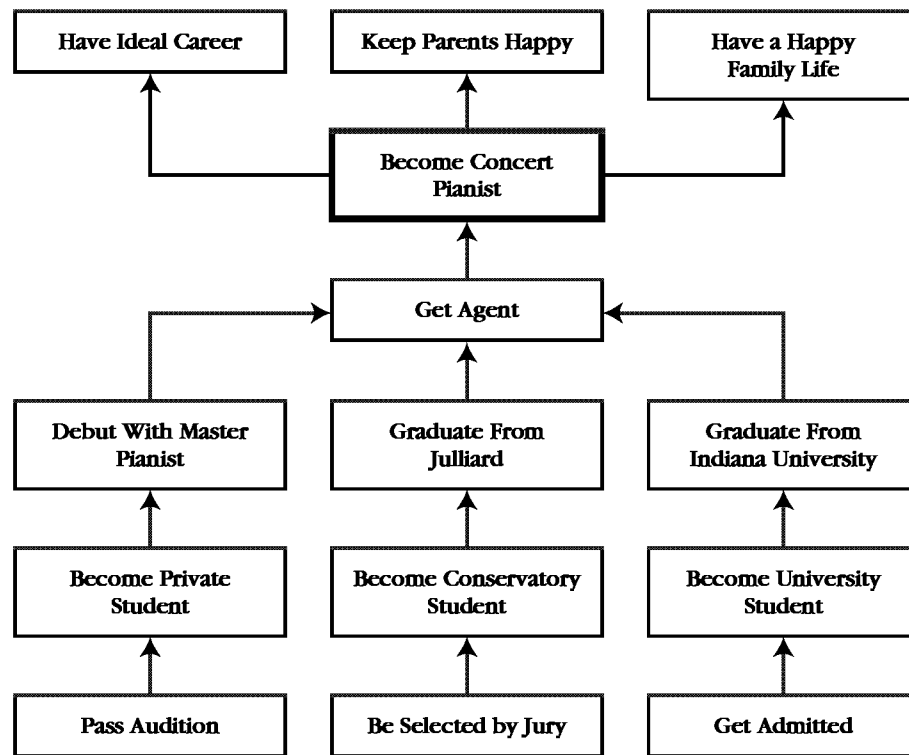


Figure 8.4 A Long-Term Goal as a Complex Cognitive Lattice Structure

Source: From "A Computer Model of Affective Reactions to Goal-Relevant Events," by S.B. Ravlin, 1987, in an unpublished master's thesis University of Illinois-Urbana-Champaign. As cited in *The Cognitive Structure of Emotions*, A. Ortony, G.L. Clore, and A. Collins (Eds.), 1998. Cambridge: Cambridge University Press.

the goal lattice structure are the pianist's most abstract (and long-term) goals, and at the bottom are the most concrete (and short-term) goals. Each aspiration is interconnected with each other in the sense that each shares in the musician's overall long-term goal of becoming a concert pianist. Furthermore, each aspiration is connected in a causal flow in which the achievement of a short-term goal increases the probability of attaining the next short-term goal, whereas the failure to achieve one goal decreases the probability of attaining another.

GOAL STRIVING

Goal setting seems so promising, so ripe with potential, as a motivational intervention strategy for helping people accomplish the sorts of things they wish to accomplish (see Box 8). The self-help books in the mega bookstores agree, as they advise readers to set goals and to focus their full attention on these goals. If you want to make better grades, lose 10 pounds, save a ton of money, or be successful in love and work, then you must visualize the goal you want. Think it—be it, they say. Focus on it, visualize it, see the new you with goal in hand. Unfortunately, motivational processes are not that simple. The gap between goal-directed thinking and goal-direction action can be a wide one.

BOX 8

Mental Simulations: Focusing on Action

Consider a series of studies designed explicitly to test the advice to “visualize success” (Taylor et al., 1998). In these studies, participants either (1) focused on the goal they wished to attain, (2) focused on how to attain the goal, or (3) did not focus on anything in particular (a control group). Focusing on the goal actually interfered with goal attainment! Focusing one’s attention on the goal itself actually backfired as a motivational strategy. Focusing on how to accomplish the goal, however, did facilitate goal attainment. These data are important because (1) they draw out the distinction between the content of a goal (what one is striving for) and the process of goal striving (the means one uses to attain the goal), and (2) once a goal has been set, it does not inevitably and automatically translate itself into effective performance.

Salespeople know the following trick well: Ask someone to imagine having and using an item, and that person will become significantly more likely to later actually go out of his or her way to have and use that item (as in “Just imagine sitting in this beauty, driving it home, and parking this fine machine right in front of your home. Can you see it? Can you feel it?”). In an experimental demonstration of what salespeople already know, researchers asked members of a community to imagine owning and using

a cable-television service (Gregory, Cialdini, & Carpenter, 1982). These community members were asked to visualize the positive events related to the service (a mental simulation of using the service). Compared to nonvisualizers (a control group), those who worked through the mental simulation of using the service were indeed significantly more likely to subscribe for the service (Taylor et al., 1998).

Mental simulations are not fantasies of success or episodes of wishful thinking. Drawing out the difference between the content of a goal and the process for attaining that goal is an important distinction because visualizing fantasies of success (i.e., wishful thinking) do not produce productive behavior (Oettingen, 1996). Focusing on the rich you, the thin you, or the married you does not get you very far. Instead of focusing on outcomes (i.e., on goal content), mental simulations focus on planning and problem solving. This is the sort of mental effort that produces productive goal-directed action. To illustrate this point, imagine hearing one of the two following instructions (Pham & Taylor, 1999):

Outcome Simulation (Focus on the Goal)

Visualize yourself getting a high grade on your psychology midterm . . . imagine how you would feel. It is very important that you see yourself getting a high grade on the psychology midterm and have that picture in your mind

Process Simulation (Focus on Implementation Intentions)

Visualize yourself studying for the midterm in such a way that would lead you to obtain a high grade on the midterm. As of today and for the remaining days before the midterm, imagine how you would study to get a high grade on your psychology midterm. It is very important that you see yourself actually studying and have that picture in your mind.

The first set of instructions basically asked students to rehearse experiencing the joy of success, while the second set of instructions basically asked students to engage in planning and problem solving. Compared to a no-simulation control group, students in the outcome-simulation condition actually studied less and made poorer scores on the test. Students in the process-simulation condition studied more and made better test scores. Focusing on success might cultivate hope, but it does not promote productive goal-striving behavior. To facilitate action, people need to mentally simulate a goal process—the means by which they will accomplish the end they seek.

Implementation Intentions

When people fail to realize the goals they set for themselves, part of the problem can be explained by how people set goals (i.e., Is the goal difficult? specific? accepted? paired with feedback?). The other part of the problem, however, is simply that people fail to act on the goals they set for themselves (Orbell & Sheeran, 1998). As the old saying goes, “A goal without a plan is just a dream.” An implementation intention is a plan to carry out one’s goal-directed behavior—deciding *in advance* of one’s goal striving the “when, where, and how long” that underlies one’s forthcoming goal-directed action (Gollwitzer, 1996, 1999; Gollwitzer & Moskowitz, 1996).

Imagine that you have set a goal, such as making a 4.0 GPA, reading this book, or saving \$100 this month. How do you bridge the gap between goal and action? Should you focus on the content of the goal (visualize the 4.0) or on the means by which the

goal is to be accomplished (the steps you need to take)? Should you spend time planning how to attain your goal, or would planning just be a waste of time and what you should really do is just get started? As discussed above, planning the goal-striving process as to how one will attain a goal turns out to be an integral part of the goal–performance relationship (Gollwitzer, 1996, 1999).

A key reason people fail to attain their goals is that they often fail to develop specific action plans for how they will attain their goals. They fail to specify when they will initiate their goal-directed action, and they fail to specify how they will ensure their goal-directed persistence in the face of distractions and interruptions (Gollwitzer, 1999). In contrast, when people with goals also specify implementation intentions, they strongly increase their chance of eventual goal attainment (Aarts, Dijksterhuis, & Midden, 1999; Brandstatter, Lengfelder, & Gollwitzer, 2001; Gollwitzer & Schaal, 1998; Oettingen, Honig, & Gollwitzer, 2000).

Planning how to carry out a goal allows the performer to overcome the inevitable volitional problems associated with goal-directed behavior. Once a goal is set and committed to, the following volitional problems can be expected to emerge:

- Getting started, despite daily distractions
- Persisting, in spite of difficulties and setbacks
- Resuming, once an interruption occurs

The study of implementation intentions is the study of how goals, once set, are effectively acted on (Gollwitzer & Moskowitz, 1996). Implementation intentions are an important part of understanding motivation because it is one thing to set a goal, yet another to actually accomplish it. To set and attain a goal, one needs solutions to the sort of volitional problems listed above. All goals take time, but time has a way of opening the door to distractions, difficulties, and interruptions. The act of setting implementation intentions is the effort to close the door on volitional problems. In effect, implementation intentions buffer performers against falling prey to volitional problems.

In the first experiment on implementation intentions, experimenters asked college students going home for the Christmas holidays how they planned to spend their time and what they wanted to get done (e.g., write a paper, read a book, solve a family conflict; Gollwitzer & Brandstatter, 1997). The experimenters asked half of the students to form explicit implementation intentions for their goal by asking them to pick a specific time and a specific place in which to carry out the goal-directed action (e.g., “On the morning of December 21, I will go to the public library and write the first draft of my 10-page term paper”). The other half of the students were not asked to specify a time and a place for their goal-directed behavior but, instead, were simply encouraged to do their best to accomplish their goal. When students returned, a majority of students in the implementation intentions group had indeed attained their goal, while only a minority of students in the control group had attained their goal. Plus, the more difficult the goal was to accomplish, the more important the forming of implementation intentions were to these completion rates.

The motivational effect of an implementation intention is to link goal-directed behavior to a situational cue (i.e., to a time and place) so that goal-directed behavior is carried

out automatically, without conscious deliberation or decision making. With an implementation intention in mind, the presence of the cue facilitates the goal-direction action being implemented swiftly and effortlessly. In other words, once an intention is formed (e.g., “From December 27 through December 31 from 1:00 to 3:00 in the afternoon, I will go to the gym to run on the treadmill and complete three sets on the Nautilus machines”), the mere presence of the anticipated situational cue (1:00 PM on December 27 rolls around) automatically initiates goal-directed action. When no such intention is formed, the person’s good intention to exercise may suffer the same fate as a typical New Year’s resolution.

Implementation intentions facilitate goal-directed behavior in two ways: getting started and finishing up. Getting started with goal-directed behavior is a volitional problem when people let good opportunities to pursue their goals pass by, as in “I had all day to read the chapter, but I just never sat down and read it.” Finishing up is a volitional problem when people get interrupted, distracted, and face difficulties, as in “I started to read the chapter, but then the phone rang and I never did get back to the book.”

Goal Pursuit: Getting Started

Some people exercise every day at a certain time in the afternoon; some people read steadily and persistently when they are in the library; some people always stop completely at stop signs; and some people go to church each Sunday. Frequent and consistent pairings of particular situations with particular behaviors lead to strong links between the situation and the behavior. Creating an implementation intention for a new behavior in a new situation is essentially this same effect (Gollwitzer, 1996). Implementation intentions set up environment–behavior contingencies that lead to automatic, environmental control of behavior: “Implementation intentions create habits” (Gollwitzer, 1999).

Deciding in advance when and where a person will enact her goal-directed behavior facilitates getting started. Women who wrote down when and where they would conduct a breast self-examination actually did so 100% of the time during the next month, whereas women who simply had the goal of conducting a breast self-examination did so only 53% of the time (Orbell, Hodgkins, & Sheeran, 1997). The two groups of women had the same goal, yet attained different results. Similar findings have occurred when these same procedures were carried out with the goals of eating healthy foods (Verplanken & Faes, 1999), taking vitamin pills (Sheeran & Orbell, 1999), and resuming an active lifestyle following surgery (Orbell & Sheeran, 2000). These studies make it clear that attaining goals requires not only effective goal setting but also a preaction period in which one decides when, where, and how that goal will be implemented.

Goal Pursuit: Persisting and Finishing

Once started in the pursuit of a goal, people often face circumstances that were more difficult than they expected. They encounter distractions and demands on their time, and they also get interrupted and face the prospect of getting started all over again. But implementation intentions, once set, facilitate persistence and reengagement during goal pursuit.

Implementation intentions facilitate persistence by helping people anticipate a forthcoming difficulty and therefore form an intention of what they will do once the difficulty

comes their way (Achtziger, Gollwitzer, & Sheeran, 2008). For instance, a woman with a weekend goal of meeting at least one new person can anticipate that, when the weekend comes, she will feel anxious and discouraged. Anticipating this, she can plan a schedule of events for the weekend and arrange to talk with a close friend on the telephone for encouragement. Such preparatory planning does indeed help people's subsequent persistence and goal attainment (Koestner, Lekes, Powers, & Chicoine, 2002). Dieters and athletes also form implementation intentions to prevent their goal striving from straying off course (Achtziger et al., 2008).

Implementation intentions create a type of close-mindedness that narrows one's field of attention to include goal-directed action but to exclude distractions. For instance, students were placed in front of a computer terminal and asked to solve a series of attention-demanding mathematical problems while distracting video clips of television commercials played at random times on a television monitor mounted just above the computer screen. Some of the students were asked to form an implementation intention (i.e., as soon as the commercial came on, students told themselves to ignore it), while others were not. Students who formed the implementation intention prior to solving the mathematics problems solved more problems than did students who did not form the distraction-inhibiting intention (Schaal & Gollwitzer, 1999). Without an implementation intention, students were vulnerable to distraction.

Implementation intentions also help people finish up uncompleted goals. Workers who began to write a letter of correspondence were interrupted, and half of the workers were then asked to form an implementation intention while the other half were not. When the two groups of workers returned to their desks, those with an intention to finish the letters upon their return (implementation intention) were indeed more likely to complete their unfinished business than were those who were similarly interrupted but who did not harbor an implementation intention to cope with the interruption.

Whether the problem is getting started or finishing up, taking the time necessary to plan how, when, where, and for how long one will carry out goal-directed behavior improves the performer's chance of realizing the goal. Of course, setting the goal is a crucial part of the goal-performance relationship, but the addition of implementation intentions helps close the gap that often exists between setting a goal and actually carrying it out. The full how-to process of setting goals and implementing action is summarized in both Box 8 and the final section of the chapter.

PUTTING IT ALL TOGETHER: CREATING AN EFFECTIVE GOAL-SETTING PROGRAM

How does one effectively set goals, either for oneself or for others? The practical point within any goal-setting program is to increase one's performance—exercise more, save more, recycle more, and so on. To attain such goals, several conditions must be met and these conditions constitute the essence of an effective goal-setting program, as outlined in Table 8.1.

The first four steps in a goal-setting program involve the sequential steps within the goal-setting process. All goal-setting programs begin with the question, "What do you want to accomplish?" The answer to this question is the specification of a performance-based ideal state one longs to achieve, as in exercising more, saving more,

Table 8.1 Steps in an Effective Goal-Setting Program**Sequential Steps within the Goal-Setting Process**

1. Specify the objective to be accomplished.
2. Define goal difficulty.
3. Clarify goal specificity.
4. Specify the time span when performance will be assessed.

Sequential Steps within the Goal-Striving Process

5. Check on goal acceptance.
6. Discuss goal-attainment strategies.
7. Create implementation intentions.
8. Provide performance feedback.

or recycling more. The second step is to ensure that the goal is a relatively difficult one, given the person's abilities, experiences, and access to resources. The goal also needs to be specific, as the third step is to translate vague goals such as "recycle more" into more specific objectives such as "save every new paper that comes into the house and return it to the recycling center." Fourth, a time when performance will be assessed needs to be stated, such as "Every Saturday morning I'll measure how many newspapers I took to the recycling center."

The last four steps in a goal-setting program involve the sequential steps within the goal-striving process. First, the goal needs to be transformed from an externally imposed or roommate endorsed goal into a personally endorsed and personally accepted goal, one that has a measure of personal commitment associated with it. Once the goal has been accepted and internalized, the next step is to discuss possible plans, strategies, and courses of action that might enable one to advance from goal setting to goal attainment. In this same spirit, the third step is the formulation of an implementation intention that involves articulating the time and place in which goal-directed action will occur. Lastly, one needs to create a means to provide the goal seeker with the steady stream of feedback that will enable them to continually assess if they are performing at, above, or below goal level.

SUMMARY

The cognitive perspective on motivation focuses on mental processes as causal determinants to action. Thus, the cognitive study of motivation concerns itself with the cognition → action sequence. This chapter discusses the motivational significance of four elements in the cognition → action sequence: plans, goals, implementation intentions, and mental simulations.

Plans and goals rely on discrepancy as their driving motivational force to action. Cognitive discrepancies explain motivation by highlighting how mismatches between the person's present state versus ideal state energize and direct action. Two types of discrepancies exist: discrepancy reduction and discrepancy creation. Discrepancy reduction captures the essence of plans and corrective motivation, whereas discrepancy creation captures the essence of goals and the goal-setting process.

People are readily aware of the present state of their behavior, their environment, and the status of the events in their lives. People also envision ideal states for these same behaviors, environments, and events. When a present-state-versus-ideal-state mismatch exists, incongruity (or discrepancy) produces a general corrective motivation that gives rise to plan-directed behavior

capable of reducing (or removing) the discrepancy. For instance, a student might say, "My desk sure is a mess. I would like it to be clean and well organized. That discrepancy is sort of bothering me, so I'll make a plan of how I can change my desk from clutter to clean." When discrepancies generate corrective motivation, people either generate a plan that will advance their present behavior up to its ideal or they revise the plan to reverse the ideal state down to something closer to the present state. Corrective motivation also has emotional implications, as people who make slower than expected progress toward their plans experience negative emotions such as frustration, whereas people who make faster than expected progress experience positive emotions such as enthusiasm.

Goals are the objectives people strive to accomplish. Goals that are both difficult and specific generally improve performance, and they do so by producing motivational effects: Difficult goals mobilize effort and increase persistence, while specific goals direct attention and promote strategic planning. Two conditions are necessary before goals will enhance performance: feedback and goal acceptance. With feedback, a performer can evaluate his or her performance as being at, above, or below the level of the goal standard. Performing below goal level generates dissatisfaction that underlies a desire to improve; performing above goal level generates satisfaction that underlies a willingness to set more difficult goals in the future. Goal acceptance refers to the process in which the performer accepts another person's assigned goal as his own.

Once a goal has been set, it does not inevitably and automatically translate itself into effective performance. This is so because people have trouble getting started and because people have trouble persisting and finishing when they encounter inevitable distractions and interruptions. In the effort to translate their goals into action, performers benefit from formulating implementation intentions that specify a plan as to when, where, how, and for how long one is to act. People who set implementation intentions in advance of their goal-directed action are significantly more likely to attain or complete their goals than are people who do not set implementation intentions. Implementations have positive effects on goal striving by helping performers overcome the volitional problems associated with getting started, persisting in the face of difficulties, and resuming goal-direction action once interrupted. These intentions essentially delegate the control of goal-directed action to merely encountering anticipated situational cues (e.g., "When I encounter situation X, I will do Y.").

The chapter concluded by offering an eight-step goal-setting program to integrate the principles of the chapter and to help practitioners put these principles into effective action. The first four steps involve the sequential steps within the goal-setting process—specify the objective, set goal difficulty, clarify goal specificity, and decide when performance will be assessed. The last four steps involve the sequential steps within the goal-striving process—check on goal acceptance, discuss goal attainment strategies, formulate implementation intentions, and provide performance feedback.

READINGS FOR FURTHER STUDY

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Chapter 9

Personal Control Beliefs

MOTIVATION TO EXERCISE PERSONAL CONTROL

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- Perceived Control: Self, Action, and Control

SELF-EFFICACY

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Helplessness and Depression

Explanatory Style

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PUTTING IT ALL TOGETHER: HOPE**SUMMARY****READINGS FOR FURTHER STUDY**

What does the future have in store for you? Will you graduate from college? Will your classes be interesting? Will you pass this course? Will you find this ninth chapter interesting? Will the chapter address important topics, or will it present topics that are only dry and confusing? This winter will you catch the flu? When you apply for your next job, will you get it? Will you fall in love? Will you fall out of love? If you were to go on a blind date or to meet your mate's parents, would these strangers like you? Will you find someone to share your life with, as in marriage? When you drive to school or work tomorrow, will you get stuck in traffic? Will you get a parking ticket? When you turn the car's ignition key, will the car start on the first try? Will you live to see your 50th birthday?

How able are you to cope with what the future has in store? Do you have what it takes to graduate? If you bomb your first exam in this course, can you mount a comeback and still do well in the course? Can you use a computer to write a term paper? What would happen if you tried to shop online—would it go well? In relationships, can you make another person laugh? Can you cheer up your friends when they feel depressed? Can you defuse arguments? Could you be the life of a party? If a bully insults and pesters you, could you handle the situation? Can you run 3 miles without stopping to rest? Okay, how about 1 mile? Can you sing? Could you hit a golf ball on your first try? Could you hit the golf ball if an audience was watching?

Our expectancies of what will happen and our expectancies of how well we can cope with what happens have important motivational implications. Imagine how motivationally problematic your college experience would be if you expected not to graduate, not to pass a particular course, not to get a job after graduation, and not to understand the professor or this book. Imagine how motivationally problematic your interpersonal relationships would be if you expected others not to like you, not to care about your welfare, or to express only hostility. What if you expected that everyone you met would reject you? Imagine how motivationally problematic your athletic participation would be if you expected only to fail and to embarrass yourself in front of others. Imagine how difficult it would be to muster the motivation to run three miles if you knew beforehand that you could not do so.

MOTIVATION TO EXERCISE PERSONAL CONTROL

The focus throughout this chapter is the motivation to exercise personal control over what happens to you. To some extent, environments are predictable, and to some extent, people are able to figure out how to exert control over the predictable aspects of the environment. In predicting what will happen and in trying to influence what happens, people try to make desirable outcomes more likely and undesirable outcomes less likely. By exercising personal control in this way, people attempt to improve their lives and also the lives of others.

The desire to exercise personal control is predicated on a person's belief that they have the power to produce favorable results. When people believe they (1) "have what it takes" to influence their environment and (2) the environment will be responsive to their influence attempts, then they will indeed try to make things happen for the better—they will be motivated to exercise personal control over life's outcomes.

The strength with which people try to exercise personal control can be traced to the strengths of their expectancies of being able to do so. Expectancy is a subjective prediction of how likely it is that an event will occur. That event can be an outcome (e.g., losing 10 pounds) or a course of action that brings the outcome to pass (e.g., running 20 minutes on a treadmill without having a heart attack). When politicians enter an election or athletes enter a competition, they appraise the likelihood that they will win. Before people leap across a creek or tell a risqué joke, they appraise the likelihood of landing on solid ground. In anticipating events and outcomes, people rely on their past experiences and personal resources to make forecasts about what the future holds and how they will cope with what is to come.

Two Kinds of Expectancy

Two types of expectancies exist: efficacy expectations and outcome expectations (Bandura, 1977, 1986, 1997; Heckhausen, 1977; Peterson et al., 1993). An efficacy expectation (see Figure 9.1) is a judgment of one's capacity to execute a particular act or course of action. The question is, "Can I do it?" An outcome expectation (see Figure 9.1) is a judgment that a given action, once performed, will cause a particular outcome. The question is, "Will what I do work?" Efficacy expectations estimate the likelihood that an individual can behave in a particular way; outcome expectations estimate how likely it is that certain consequences will follow once that behavior is enacted. For an illustration of efficacy and outcome expectations, consider the political candidate who wants to win an election and believes that by giving a convention speech she can win. Efficacy expectations pertain to her confidence that she can do what it takes to give a competent speech. Outcome expectancies pertain to her beliefs that once she gives her competent speech, then people will listen, be persuaded by her oratory, and vote for her in the election.

Efficacy and outcome expectations are separate, causal determinants to the initiation and regulation of behavior (Bandura, 1991). Consider the different expectancies that might run through a surgeon's mind in preparing for an operation. The extent to which the surgeon engages in that operation depends on (1) his efficacy expectation that he can successfully perform the surgery with excellence and (2) his outcome expectation that the surgery, once enacted, will produce certain physical, psychological, emotional, financial, and social benefits for himself and for his patient.

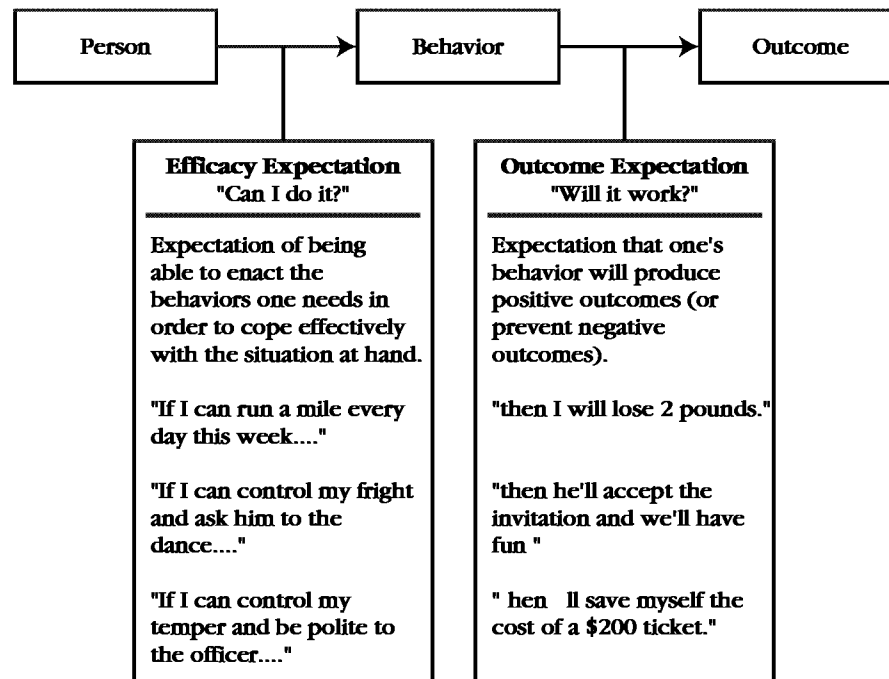


Figure 9.1 Two Kinds of Expectation: Efficacy and Outcome

Both efficacy and outcome expectations must be reasonably high before behavior becomes energetic and goal directed. Thus, an analysis of efficacy and outcome expectancies allows us to understand people's reluctance to engage in activities such as public speaking, dating, athletics, and job interviews. To address a group, date, compete, or interview, the person must not only be confident in his efficacy to execute these behaviors but he must also be reasonably assured that an effective performance will pay off (i.e., will lead to desired outcomes). Take away either of these positive forecasts and reluctance and avoidance become rather logical ways of acting.

Perceived Control: Self, Action, and Control

Figure 9.1 puts the interrelationships between Person, Behavior, and Outcome at the center of expectancy motivation. Some researchers prefer using the alternative terminology of Self → Action → Control to communicate this same idea (Skinner, 1996), so Figure 9.2 presents this alternative (but interchangeable) terminology. As shown in the figure, the defining relationship in the study of perceived control is that of Self (Agent) → Control (Ends). People express this relationship in everyday questions such as, "Can I improve my health?" and "Can I improve my marriage?" In other words, perceived control revolves around how the Self (Agent) can exert Control (Ends). Figure 9.2, like Figure 9.1, shows how perceived control can be broken down into the more basic questions of "Can I generate effective coping?" (Self → Action) and "Will my coping improve my health or marriage?" (Action → Control). So, Figures 9.1 and 9.2 communicate the same message, but Figure 9.2 introduces and highlights the larger superordinate construct of perceived control (Self → Control).

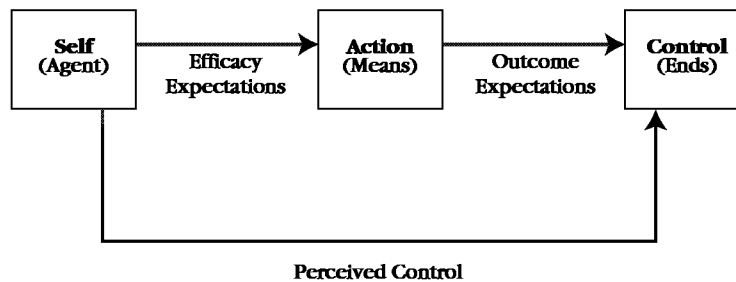


Figure 9.2 *Self → Action → Control* Model of Perceived Control

SELF-EFFICACY

Efficacy expectations center on questions such as the following: Can I perform well on this particular task? If things start to go wrong during my performance, do I have the resources within me to cope well and turn things around for the better? But efficacy expectations and self-efficacy are not quite the same thing. Self-efficacy is a more generative capacity in which the individual (i.e., the “self” in self-efficacy) organizes and orchestrates his or her skills to cope with the demands and circumstances he or she faces. It is the capacity to use one’s personal resources well under diverse and trying circumstances. Formally, self-efficacy is defined as one’s judgment of how well (or poorly) one will cope with a situation, given the skills one possesses and the circumstances one faces (Bandura, 1986, 1993, 1997).

Self-efficacy is not the same as “ability.” Competent functioning requires not only possessing skills (i.e., ability) but also the capacity to translate those skills into effective performance, especially under trying and difficult circumstances. A snow skier might have wondrous slalom, mogul, and downhill racing skills but still perform dismally if the wind blows, the snow ices, or the slopes are crowded with clumsy skiers who keep falling. Self-efficacy is that generative capacity in which the performer improvises ways to best translate personal abilities into effective performance. Self-efficacy is just as important a determinant of competent functioning as is ability because performance situations often are stressful, ambiguous, and unpredictable, and as one performs, circumstances *always* change (Bandura, 1997).

Consider that most of us can drive a car rather well on the interstate as most of us rate very high on abilities such as steering, braking, negotiating traffic, reciting traffic laws, and finding our destinations. But self-efficacy becomes important when circumstances rise to test our abilities, as when driving in an unreliable car on an unfamiliar road with poorly marked streets, during a snowstorm, as monster trucks whiz by splashing slush that covers the windshield. Even highly skilled drivers sometimes perform dismally because circumstances change in stressful and overwhelming ways. Under trying circumstances, the driver must have what it takes to keep arousal in check, to think clearly in deciding between options, to avoid perils, and perhaps to negotiate or show leadership in enlisting the assistance of the passenger. The same self-efficacy analysis applies to academic test taking (Bandura, Cioffi, Taylor, & Brovillard, 1988), athletic performance (Feltz, 1992), self-defense (Ozer & Bandura, 1990), gender role conduct (Bussey & Bandura, 1999), health-promoting behaviors (Bandura, 1998), and collective agency for solving social problems (Bandura, 1997).

The opposite of efficacy is doubt. For the driver who doubts his or her capacity to cope, then surprises, setbacks, and difficulties will create anxiety (Bandura, 1988), confusion (Wood & Bandura, 1989), negative thinking (Bandura, 1983), and aversive physiological arousal and bodily tension (Bandura, Taylor, Williams, Mefford, & Bar-chas, 1985). Imagine the unfolding of events that might occur when the self-doubt of an otherwise skilled driver comes face to face with surprises, setbacks, and difficulties. Perhaps an unexpected storm begins (surprise), or the windshield wipers fail (setback), or ice forms on the road (difficulty). Under such trying conditions, doubt can interfere with effective thinking, planning, and decision making to cause axiety, confusion, arousal, tension, and distress that can spiral performance toward disaster. Of course, surprises, setbacks, and difficulties may not produce poor performance just as skill, talent, and ability may not produce excellent performance. Rather extent of self-efficacy (vs. self-doubt) is the motivational variable that determines the extent to which a performer copes well (vs. poorly) when her skills and abilities are stressed.

Consider the more extended example of trying to present oneself as socially competent as during a job interview, auditioning for a part in a play, or going on a first date. In a self-efficacy analysis, the skills involved in interviewing, auditioning, and dating and the situational demands placed on the performer are complex and multidimensional. The following list describes an adolescent on a first date (Rose & Frieze, 1989) by listing some task demands (left) as well as the skills needed to successfully cope with those demands (right).

Dating Demand

Ask for a date
Make a plan to do something interesting
Arrive on time at date's house
Relate warmly to parents or roommates
Joke, laugh, and talk
Impress date
Be polite
Understand how other feels
Be responsive to the other's needs
Kiss goodnight

Dating Skill

Assertiveness
Creativity
Punctuality
Sociability
Sense of humor
Salesmanship
Social etiquette
Empathy
Perspective taking
Being romantic

As the adolescent contemplates the date, he asks what specific events will take place. What skills will be needed to perform well? If things go unexpectedly wrong, can he make the necessary corrective adjustments? How does he expect to feel during the date and during each specific event? In this hypothetical situation, the adolescent expects that the overall task at hand will require a dozen or so different skills, such as assertiveness, sociability, and so on. The adolescent also has some expectation of how effectively he can execute each of these skills, and those expectancies might range from woefully incompetent to highly competent. These expectations represent the heart and soul of individual efficacy expectations, as well as one's more general sense of self-efficacy toward the situation at hand: How effective will I be when the situation calls for me to be assertive? When I try to be assertive, will I feel mostly confidence or mostly doubt? Are my skills hardy enough to get the evening back on track if things go wrong (e.g., parents turn out to be very difficult to relate to)? Just how much social doubt and anxiety

the adolescent feels in this particular situation can be predicted by a self-efficacy analysis of his perceived efficacy expectations in each of the 10 task-related demands.

Furthermore, once we know the adolescent's expectancies of efficacy versus doubt in coping with these task demands, we can predict his motivation to go on the date versus avoid it. Boiled down to its essence, self-efficacy predicts the motivational balance between wanting to give it a try on the one hand and anxiety, doubt, and avoidance on the other.

Sources of Self-Efficacy

Self-efficacy beliefs do not just occur out of the blue; they have causes and histories. Self-efficacy beliefs arise from (1) one's personal history in trying to execute that particular behavior, (2) observations of similar others who also try to execute that behavior, (3) verbal persuasions (pep talks) from others and (4) physiological states such as a racing heart versus a calm one.

Personal Behavior History

The extent to which a person believes she can competently enact a particular course of action stems from her personal history of trying to enact that course of action in the past (Bandura, 1986, 1997; Bandura, Reese, & Adams, 1982). People learn their current self-efficacy from their interpretations and memories of past attempts to execute the same behavior. Memories and recollections of past attempts to enact the behavior judged as competent raise self-efficacy, whereas memories and recollections of past attempts judged as incompetent lower self-efficacy. For instance, as a child prepares to ride a bicycle, her personal history of being able to actually carry out the cycling behavior on past occasions functions as firsthand information about self-efficacy in the present encounter. Of course, a person's behavior history with regard to any specific course of action changes a bit with each new enactment. How important any one behavioral enactment is to future efficacy depends on the strength of the performer's preexisting expectation. Once one's personal behavior history has produced a strong sense of efficacy, an occasional incompetent enactment will not lower self-efficacy much (or an occasional competent enactment will not raise a strong sense of inefficacy much). If the performer is less experienced (i.e., lacks a behavioral history), however, each new competent or incompetent enactment will have greater effect on future efficacy. This is a very important point in teaching situations in which learners are trying out new behaviors and new activities. Of the four sources of self-efficacy, personal behavior history is the most influential (Bandura, 1986).

Vicarious Experience

Vicarious experience involves observing a model enact the same course of action the performer is about to enact (e.g., "You go first, I'll watch"). Seeing others perform masterfully raises an observer's own sense of efficacy (Bandura, Adams, Hardy, & Howells, 1980; Kazdin, 1979). This is so because seeing similar others perform the same behavior initiates a social comparison process (e.g., "If they can do it, so can I"). But vicarious experience works the other way as well, as observing someone perform the same behavior clumsily lowers our own sense of efficacy (e.g., "If they can't do it, what makes me think

I can?"; Brown & Inouye, 1978). The extent to which a model's enactment affects our own efficacy depends on two factors. First, the greater the similarity between the model and the observer, the greater the impact the model's behavior will have on the observer's efficacy forecast (Schunk, 1989b). Second, the less experienced the observer is at the behavior (a novice), the greater the impact of the vicarious experience (Schunk, 1989a). Thus, vicarious experience is a potent source of efficacy for relatively inexperienced observers who watch similar others perform.

Verbal Persuasion

Coaches, parents, teachers, employers, therapists, peers, spouses, friends, audiences, clergy, authors of self-help books, infomercials, inspirational posters, happy-face stickers, and songs on the radio often attempt to convince us that we can competently execute a given action—despite our entrenched inefficacy—if we will just try. When effective, pep talks persuade the performer to focus more and more on personal strengths and potentials and less and less on personal weaknesses and deficiencies. Pep talks shift a performer's attention from sources of inefficacy to sources of efficacy. But verbal persuasion goes only so far if it is contradicted by direct experience. Its effectiveness is limited by the boundaries of the possible (in the mind of the performer) and depends on the credibility, expertise, and trustworthiness of the persuader. Individuals also give themselves pep talks, usually in the form of self-instruction, that can boost efficacy, at least for a little while (Schunk & Cox, 1986). Verbal persuasion works to the extent that it provides the performer with enough of a temporary and provisional efficacy boost to generate the motivation necessary for another try (Schunk, 1991).

Physiological State

Fatigue, pain, muscle tension, mental confusion, and trembling hands are physiological signals that the demands of the task currently exceed the performer's capacity to cope with those demands (Taylor, Bandura, Ewart, Miller, & DeBusk, 1985). An abnormal physiological state is a private, yet attention-getting, message that contributes to one's sense of inefficacy. An absence of tension, fear, and stress, on the other hand, heightens efficacy by providing firsthand bodily feedback that one can indeed cope adequately with task demands (Bandura & Adams, 1977). The causal direction between efficacy and physiological activity is bidirectional: Inefficacy heightens arousal and heightened arousal feeds back to fuel perceived inefficacy (Bandura et al., 1988). Physiological information communicates efficacy information most when initial efficacy is uncertain (one is performing a task for the first time). When efficacy is relatively assured, people sometimes discount, or even reinterpret, their physiological cues as a positive source of efficacy, as in "I'm pumped up for this" (Carver & Blaney, 1977).

As people face challenging and difficult circumstances and ready themselves to carry out a course of action, these are the four sources of information they rely on to forecast their sense of efficacy during the performance. For a concrete illustration, consider the child at the county swimming pool waiting her turn in line to jump off the high diving board. How eager (motivated) she will be to do so depends on how well she has been able to negotiate the jump in the past, how well or ineptly the divers in the line before her are able to dive, the conversation of encouragement versus doubt and ridicule she hears

from her friend standing in line with her, and the message of panic versus “cool, calm, and collected” her body sends her as she stands 6 feet above the water looking down. By itself, none of this information determines her efficacy or her diving forecasts. Instead, through reflective thought, she selects information to attend to, weighs the importance of each, and eventually integrates the multiple (and sometimes contradictory) sources of information into an overall self-efficacy judgment (Bandura, 1997).

While integrating these multiple sources of self-efficacy information into a single judgment is a complex process, the first two sources of efficacy information—personal behavior history and vicarious experience—are generally the stronger sources of efficacy beliefs (Schunk, 1989b). The relative potency of the different sources of efficacy information is important because of its implications for therapeutic strategies for designing motivational interventions for persons with low self-efficacy beliefs (e.g., Ozur & Bandura, 1990). Personal behavior history and vicarious experience are promising therapeutic possibilities, while verbal persuasion and regulating physiological states serve as supplemental opportunities to alter pessimistic self-efficacy beliefs.

Self-Efficacy Effects on Behavior

Once formed, self-efficacy beliefs contribute to the quality of human functioning in multiple ways (Bandura, 1986, 1997). Generally speaking, the more people expect that they can adequately perform an action, the more willing they are to put forth effort and persist in facing difficulties when activities require such action (Bandura, 1989; Bandura & Cervone, 1983; Weinberg, Gould, & Jackson, 1979). In contrast, when people expect that they cannot adequately perform the required task, they are not willing to engage in activities requiring such behavior. Instead, they slacken their effort, prematurely settle for mediocre outcomes, and quit in the face of obstacles (Bandura, 1989). More specifically, self-efficacy beliefs affect (1) choice of activities and selection of environments, (2) extent of effort and persistence put forth during performance, (3) the quality of thinking and decision making during performance, and (4) emotional reactions, especially those related to stress and anxiety. The four sources of efficacy and the four effects of strong versus weak self-efficacy beliefs are organized in summary form in Figure 9.3.

Choice: Selection of Activities and Environments

People continually make choices about what activities to pursue and which environments to spend time in. In general, people seek out and approach with excitement those activities and situations that they feel capable of adjusting to or handling, while people shun and actively avoid those activities and situations that they see as likely to overwhelm their coping capacities (Bandura, 1977, 1989). In a self-efficacy analysis, a person will often choose to avoid tasks and environments as a self-protective act for guarding against the possibility of being overwhelmed by their demands and challenges. If the student expects a math class or a foreign language class to be overwhelming, confusing, and frustrating, doubt overwhelms efficacy and produces an avoidance decision, such as withdrawing from class discussions or not enrolling in the class in the first place. The same doubt-plagued avoidance choices apply to social opportunities, such as dating, dancing, participating in sports, selecting (or avoiding) a particular musical instrument, and career paths pursued and shunned.

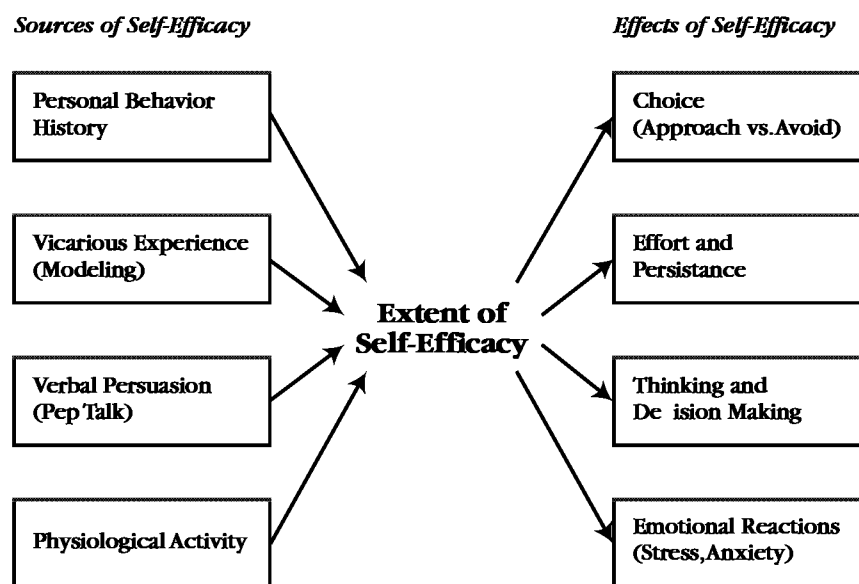


Figure 9.3 Sources and Effects of Self-Efficacy Beliefs

Avoidance choices exert a profound, detrimental, long-term effect on a person's development (Bandura, 1986). Weak self-efficacy beliefs set the stage for people to shun activities and therefore contribute to their own arrested developmental potentials (Holahan & Holahan, 1987). When people shun an activity out of doubt over personal competence, they participate in the self-destructive process of retarding their own development. If doubt leads people to avoid taking a foreign language class today, then their future likely involves less travel, fewer interactions with international students, narrower culinary preferences, stronger nationalistic beliefs, and so on. Furthermore, the more they avoid such activities, the more entrenched self-doubt becomes because doubters never get the chance to prove themselves wrong and never give themselves opportunities to observe expert models or receive instruction. Such a pattern of avoidance progressively narrows people's ranges of activities and settings (Bandura, 1982; Betz & Hackett, 1986; Hackett, 1985).

Effort and Persistence

As people perform, self-efficacy beliefs influence how much effort they exert as well as how long they put forth that effort in the face of adversity (Bandura, 1989). Strong self-efficacy beliefs produce persistent coping efforts aimed at overcoming setbacks and difficulties (Salomon, 1984). Doubt, on the other hand, leads people to slacken their efforts when they encounter difficulties or give up altogether (Bandura & Cervone, 1983; Weinberg et al., 1979). Self-doubt also leads performers to settle prematurely on mediocre solutions.

In trying to master complex activities, learning is always fraught with difficulties, obstacles, setbacks, frustrations, rejections, and inequalities, at least to a degree. Self-efficacy plays a pivotal role in facilitating effort and persistence not because it silences doubt following failure and rejection (because these are expected, normal emotional reactions). Instead, self-efficacy leads to a *quick recovery* of self-assurance

following such setbacks (Bandura, 1986). Using examples of persistent writers, scientists, and athletes, Albert Bandura argues that it is the resiliency of self-efficacy in the face of being pounded by uninterrupted failure that provides the motivational support necessary for continuing the persistent effort needed for competent functioning and the development of expertise (Bandura, 1989).

To illustrate this point, Bandura and other self-efficacy researchers quote stories of resiliency from John White's (1978) book *Rejection*. For example, Michael Jordon was cut from his high school basketball team in the 10th grade, Walt Disney was fired by a newspaper editor who said he "lacked imagination," Decca Records turned down a contract with the Beatles saying "We don't like their sound," and J. K. Rowling was rejected by 12 different publishers before *Harry Potter and the Sorcerer's Stone* became an accepted manuscript.

Thinking and Decision Making

People who believe strongly in their efficacy for solving problems remain remarkably efficient in their analytic thinking during stressful episodes, whereas people who doubt their problem-solving capacities think erratically (Bandura & Wood, 1989; Wood & Bandura, 1989). To perform their best, people must first use memories of past events to predict the most effective course of action. They must also analyze feedback to assess and to reassess the merit of their plans and strategies. A strong sense of efficacy allows the performer to remain task focused, even in the face of situational stress and problem-solving dead ends. In contrast, self-doubt distracts decision makers away from such task-focused thinking as attention shifts to the deficiencies of the self and the overwhelming demands of the task. In short, doubt deteriorates, whereas efficacy buffers, the quality of a performer's thinking and decision making during a performance.

Emotionality

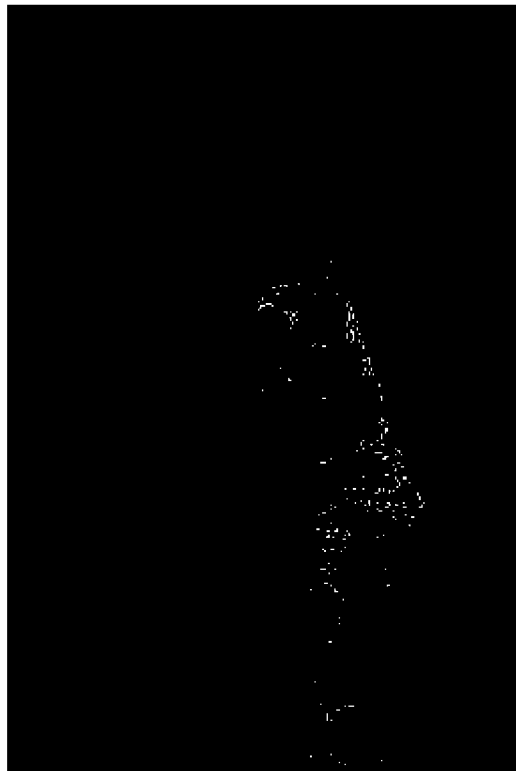
Before performers begin an activity, they typically spend time thinking about how they will perform. Persons with a strong sense of efficacy attend to the demands and challenges of the task, visualize competent scenarios for forthcoming behaviors, and harbor enthusiasm, optimism, and interest. Persons with a weak sense of efficacy, however, dwell on personal deficiencies, visualize the formidable obstacles they face, and harbor pessimism, anxiety, and depression (Bandura, 1986). Once performance begins and things start to go awry, strong self-efficacy beliefs keep anxiety at bay. People who doubt their efficacy, however, are quickly threatened by difficulties, react to setbacks and negative feedback with distress, and see their attention drift toward personal deficiencies and negative emotionality.

Life in general brings any number of potentially threatening events (e.g., examinations, public performances, physical and psychological threats), and perceived self-efficacy plays a central role in determining how much stress and anxiety such events bring to any individual performer. Rather than existing as a fixed property of events, "threat" always depends on the relationship a person has to the task (Folkman & Lazarus, 1985; Lazarus & Folkman, 1984). Knowing that one's coping abilities cannot handle an event's perceived demands conjures up thoughts of disaster, emotional arousal, and feelings of distress and anxiety (Bandura et al., 1982, 1985; Lazarus,

1991a). More optimistically, when people plagued with self-doubt undergo therapy-like conditions to enhance their coping capabilities, the intimidating event that once conjured up such an avalanche of doubt, dread, and distress no longer does so (Bandura & Adams, 1977; Bandura et al., 1980, 1982; Ozer & Bandura, 1990). As self-efficacy increases, fear and anxiety slip away. Self-efficacy researchers go so far as to say that the root cause of anxiety is low self-efficacy (Bandura, 1983, 1988). Therefore, any increase in efficacy means a corresponding decrease in anxiety.

Self-Efficacy or the Psychological Need for Competence?

Self-efficacy and perceived competence (introduced in Chapter 6) are similar, but not theoretically interchangeable, motivational constructs. While they can be experienced and measured in similar ways (“How competent do you feel during badminton?”), an example illustrates the difference between self-efficacy on the one hand and the psychological need for competence on the other. Imagine sitting on a bench at a playground when you see a young girl with a badminton bird, a racket, and a deep desire to bat the bird upwards time and time again (and not miss it). The sheer desire and intrinsic motivation to challenge herself for the spontaneous satisfactions the activity provides shows a proactive, challenge seeking psychological need for competence. After a few hits, she will begin to reflect on how she is doing and formulate a judgment of her coping capacities. If the wind begins to blow or if the playground becomes too crowded or if she figures out an effective technique, then her efficacy judgment will change. The psychological need for competence, however, is more of a developmental constant and may very well motivate her to run over to the monkey bars to seek out and try to master a new challenge.



Empowerment

Two practical points about self-efficacy are important to highlight. First, self-efficacy beliefs come from personal behavior history, vicarious experiences, verbal persuasion, and physiological states (e.g., Figure 9.3). What makes this a practical point is that it means high self-efficacy beliefs can be acquired and changed. Second, the level of self-efficacy predicts ways of coping that can be called “competent functioning” or “personal empowerment” (e.g., overcoming avoidance-based fear, putting forth high effort, persisting in the face of adversity, thinking clearly and exercising control during performance). Thus, once enhanced, self-efficacy expectations provide the cognitive-motivational foundation underlying personal empowerment.

Empowerment involves possessing the knowledge, skills, and beliefs that allow people to exert control over their lives. One example of self-efficacy as empowerment can be found in learning to defend oneself against intimidation and threats from abusive others (Ozer & Bandura, 1990). When threatened, people typically feel anxious, stressed, vulnerable, at risk, and in danger. To empower oneself, people need more than just skills and the knowledge of what to do. People also need self-efficacy beliefs so they can (1) translate their knowledge and skills into effective performance when threatened and (2) exert control over intrusive negative thoughts.

In one study, researchers trained a group of women over a 5-week period in self-defense and emotion-management skills. The women felt very afraid for their safety when going out at night because they feared being overpowered by the threats and dangers of night life in San Francisco. The researchers first asked the women to watch expert models defend themselves against assailants (using vicarious experience) and then asked the women to master the modeled behavior while hearing support and encouragement from peers (using verbal persuasion) during simulated attacks (Ozer & Bandura, 1990). The women then enacted the behaviors they had seen modeled and received coaching and corrective feedback as needed (personal behavior history). With each successive week, the women’s self-efficacy to control interpersonal threats and to regulate intrusive thinking soared. Once empowered, the women felt less vulnerable and began to engage in activities that were once thought to be too risky (e.g., travel to different parts of town, evening recreation, outdoor exercise). In other words, empowerment occurred as efficacy and engagement replaced doubt and avoidance.

One of the women voiced her empowerment by saying, “I feel freer and more capable than ever. I now make choices about what I will or won’t do based on whether or not I want to, not whether or not it is frightening to me” (Ozer & Bandura, 1990). Understandably, the reader might wonder whether the women’s increased confidence led them to behaving recklessly and put them in harm’s way. This did not happen. Instead, the women’s generalized avoidance was replaced by flexible, adaptive, confident behavior. Such a program would seemingly be effective in practically any activity that people avoid out of a fear of being overwhelmed by situational challenges, demands, and threats.

Empowering People: Mastery Modeling Program

A formal program to empower people through self-efficacy training is to employ a mastery modeling program. In a mastery modeling program an expert in the skill area works

with a group of relative novices to show them how to cope with an otherwise fearsome situation. In the example above, professionals empowered women through self-defense skills. In the school, teachers might use a mastery modeling program to empower children during reading, computers, or public speaking. On the athletic field, coaches might empower athletes with defensive skills and resilient confidence to cope with whatever offense next week's opponent might try. In the hospital and workplace, therapists and managers might empower lonely clients and anxious salespeople with social skills and resilient confidence when interacting with colleagues, clients, and strangers.

In a mastery modeling program, the expert model walks through a group of novices through the following seven steps:

1. Expert identifies component skills involved in effective coping and measures novices' efficacy expectation on each component skill.
2. Expert models each component skill, emphasizing the novices' most worrisome skill areas.
3. Novices emulate each modeled skill. Expert provides corrective feedback, as needed.
4. Novices integrate the separate component skills into an overall simulated performance. Expert introduces only mild obstacles and helps novices integrate the different skill components into a coherent overall performance.
5. Novices participate in cooperative learning groups. One person gives a simulated performance while peers watch. As they watch, peers provide encouragement and tips. Each person takes a turn until everyone has performed multiple times.
6. Novices perform individually in a near-naturalistic situation that features numerous and realistic difficulties, obstacles, and setbacks while the expert provides modeling and corrective feedback.
7. Expert models confident demeanor and arousal-regulating techniques.

The mastery modeling program is a formal procedure to utilize the four sources of self-efficacy as a means to advance from anxious novices to confident masters of the craft. By having novices perform each skill and receive corrective feedback from the expert, the novice builds efficacy through a personal behavior history. By watching the expert perform (step 2) and by watching similar peers perform (step 5), the novice builds efficacy through vicarious experience. By hearing peers' encouragement and tips (step 5), the novice builds efficacy through verbal persuasion. By observing and imitating the expert's ways of handling performance-debilitating arousal (step 7), the novice builds efficacy through physiological calmness.

MASTERY BELIEFS

Mastery beliefs reflect the extent of perceived control one has over attaining desirable outcomes and preventing aversive ones (Peterson et al., 1993). When personal control beliefs are strong and resilient, the individual perceives a strong causal link between actions and outcomes. When personal control beliefs are weak and fragile, the individual perceives that personal initiatives and actions produce little effect on what happens.

Table 9.1 Ways of Coping

Way of Coping	Illustration
Approach versus Avoidance	Taking action by moving toward and interacting with the problem versus walking away from the problem
Social versus Solitary	Taking action with a team of others versus acting alone.
Proactive versus Reactive	Taking action to prevent a problem before versus after it occurs.
Direct versus Indirect	Taking action oneself versus utilizing the help of an intermediary who takes the direct action.
Control versus Escape	Take-charge approach versus staying clear of the situation.
Alloplastic versus Autoplastic	Taking action to change the problem versus taking action to change oneself
Problem Focused versus Emotion Focused	Taking action to manage the problem causing the stress versus regulating one's emotional response to the problem.

Ways of Coping

How much mastery one exercises over outcomes depends in a significant way on how one elects to cope with the situation at hand. Table 9.1 lists a variety of possible ways of coping (Skinner, Edge, Altman, & Sherwood, 2003). People can cope by taking proactive or reactive action, by approaching the problem and taking action or by avoiding it and walking away, singly or in the context of a group or organization, by focusing on the problem to be solved or by focusing on regulating their emotions to better handle what is happening to them, and by electing to enact additional ways of coping as well, as illustrated in the table.

Mastery versus Helplessness

People learn to react to failure in different ways. A mastery motivational orientation refers to a hardy, resistant portrayal of the self during encounters of failure. With a mastery motivational orientation, the person responds to failure by remaining task focused and by being bent on achieving mastery in spite of difficulties and setbacks (Diener & Dweck, 1978, 1980). On the other hand, a helpless motivational orientation refers to a fragile view of the self during encounters of failure. With a helpless motivational orientation, the person responds to failure by giving up and withdrawing, acting as if the situation were out of his or her control (Dweck, 1975; Dweck & Repucci, 1973).

Most people perform well and stay task focused when working on easy problems and when performing well. However, when tasks turn difficult and challenging—when outcomes are hard to control, the motivational significance of mastery versus helplessness becomes clear. Mastery-oriented persons seize challenges and become energized by setbacks. Helpless-oriented persons shy away from challenges, fall apart in the face of setbacks, and begin to question and then outright doubt their ability. On those occasions in which success feedback slips into failure feedback, mastery-oriented individuals increase their efforts and change their strategies (Diener & Dweck, 1978, 1980). Under

these same conditions, helpless-oriented individuals decrease their efforts and begin to condemn their abilities and lose hope for any future successes (Dweck, 1975; Dweck & Repucci, 1973). In sum, during failure feedback, helpless-oriented people focus on why they are failing (low ability), whereas mastery-oriented people focus on how they can remedy the failure (effort, strategy; Diener & Dweck, 1978).

The different reactions to failure feedback for mastery-oriented and failure-oriented performers emanate from a different meaning of failure (Dweck, 1999). Mastery-oriented individuals do not see failure as an indictment of the self. Instead, these individuals, during setbacks and failures, might say things like, “The harder it gets, the harder I need to try” and “I love a challenge.” Failure feedback is, generally speaking, just information. In fact, failure can be helpful and constructive information (Clifford, 1984). Because mastery-oriented persons recognize that failure feedback is telling them they need more effort, better strategies, and more resources these individuals typically perform better and more enthusiastically in the face of failure. Helpless-oriented individuals see failure as an indictment of the self. They see failure as a sign of personal inadequacy, one that in turn leads them toward a state of despair.

Perhaps the reader might think the term “helpless” is a bit strong, but research by Carol Dweck (1975) suggests that it is not. When failure rears its ugly head, helpless-oriented people might start to say things like, “I’m no good at things like this” and “I guess I’m not very smart.” In other words, they denigrate their abilities and even their self-worth (Diener & Dweck, 1978). Their emotions quickly turn negative, and they start to show unusual ways for dealing with their rising anxiety and doubt, such as acting silly or trying to change the task or its rules (Diener & Dweck, 1978). Their problem-solving strategies collapse into simply making wild guesses or picking answers for random reasons. The self-denigration, negative mood, and immature strategies signal the presence of helplessness, but the telltale sign of helplessness is how *quickly* and how *emphatically* the performer gives up (Dweck, 1999).

LEARNED HELPLESSNESS

As efficacy expectancies are the building blocks of self-efficacy, outcome expectancies are the building blocks of learned helplessness. When people engage in a task, some outcome is typically at stake. During such task engagement, people make a subjective forecast of how controllable versus uncontrollable the outcome at stake is. For controllable outcomes, a one-to-one relationship exists between behavior (what a person does) and outcomes (what happens to that person). For uncontrollable outcomes, a random relationship exists between behavior and outcomes (e.g., “I have no idea what effect, if any, my behavior will have on what happens to me”).

When people expect desired outcomes (e.g., making friends, getting a job) or undesired outcomes (e.g., preventing illness, being fired from a job) are independent of their behavior, they develop a “learned helplessness” over attaining or preventing those outcomes. Learned helplessness is the psychological state that results when an individual expects that life’s outcomes are uncontrollable (Mikulincer, 1994; Seligman, 1975).

Boiled down to its essentials, learned helplessness can be understood by the strength of the perceived relationship between the person’s behavior and the person’s subsequent fate, or outcome, as represented in Figure 9.4. The relationship between one’s behavior

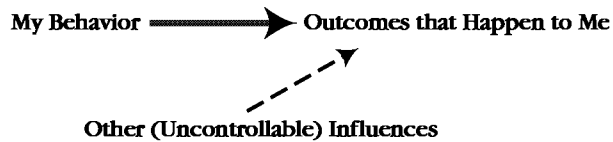
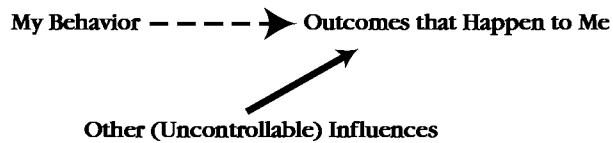
Mastery Orientation***Learned Helplessness***

Figure 9.4 Illustration of the Relationship between Behavior and Outcomes, According to a Mastery Orientation and According to Learned Helplessness

and one's outcomes can be very high, as represented by a solid and bold arrow between what one does and what outcomes one experiences. The bold solid arrow between behavior and outcomes graphically represents a mastery orientation. In contrast, the relationship between one's behavior and one's outcomes can be nonexistent, as represented by the dashed and thin arrow between what one does and what outcomes one experiences. The thin dashed arrow between behavior and outcomes graphically represents a learned helplessness orientation. With learned helplessness, one's behavior exerts little or no influence over one's outcomes. Instead, other factors outside one's control determine the outcomes, as represented by the bold solid arrow between outside influences and one's outcomes. For example, a job applicant experiencing learned helplessness might perceive that even his efficaciously enacted behaviors during the job interview (acting professionally, demonstrating skills, answering questions well) have nothing to do with whether or not he is hired by the company. He may perceive that factors outside his control (e.g., poor economy, "who you know," skin color) mostly or even fully determine whether he is hired. Because his behaviors do not control the outcome and because outside, uncontrollable influences do control the outcome, then the job applicant presumes that he is helpless to influence the hiring decision.

Learning Helplessness

Helplessness is learned. Consider the following experiment with three groups of dogs that were administered either (1) inescapable shock, (2) escapable shock, or (3) no shock (control group) (Seligman & Maier, 1967). Dogs in the two shock groups were placed into a sling and given mild 5-second electric shocks once a day for 64 consecutive days. In the *inescapable shock* group, the shocks occurred randomly, and no response could terminate the shock. Whether the dog barked, howled, or thrashed about frantically, the shock continued for its full 5 seconds. In other words, the shock was inescapable. The outcome (shock) was uncontrollable. In the *escapable shock* group, the dogs could

terminate the shock. If the dog pressed a button mounted on the wall (placed just in front of their snouts), the shock stopped. The dogs therefore had a response available to escape the shock—push the button. The outcome (shock) was controllable. In the *no-shock control* group, dogs were placed into a sling just like the dogs in the other two conditions were but they received no shocks.

Exposure to inescapable shock, escapable shock, or no shock constituted the first phase—the learning phase—of the two-phase experiment. In the second phase, the dogs in each group were all treated the same. Each dog was placed into a shuttle box in which its two compartments were separated by a wall partit on of elbow height. The two compartments were the same size and similar in most respects, except the first compartment had a grid floor through which a mild electrical shock could be delivered while the second compartment was safe from shock. To illustrate the procedure, the top half of Figure 9.5 shows a dog in the sling (during phase 1), and the lower half of the figure shows a dog in the shuttle box (during phase 2) (Carlson, 1988). On each trial during phase 2, the dogs were placed into the grid floor compartment and a mild shock was delivered. The onset of this shock was always preceded by a signal (a dimming

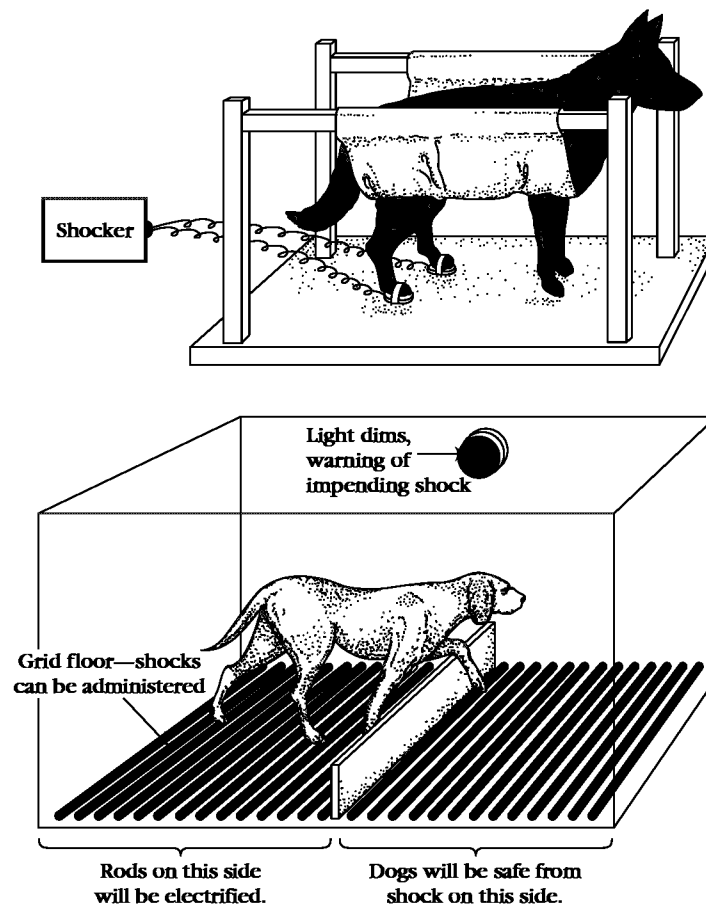


Figure 9.5 Apparatus Used in the Seligman and Maier Experiment on Learned Helplessness

Source: *From Discovering Psychology* by N.C. Carlson, 1988. Boston, MA: Allyn and Bacon. Copyright 1988 by Pearson Education. Reprinted by permission.

Table 9.2 Results of a Prototypical Learned Helplessness Study

Experimental condition	Phase 1	Phase 2	Results
Inescapable Shock	Received shock, no coping response could terminate the shock	Received an escapable shock	Failed to escape from the shock
Escapable Shock	Received shock, pressing nose against button could terminate shock	Received an escapable shock	Quickly learned to escape shock by jumping over barrier
Control, No Shock	Received no shocks	Received an escapable shock	Quickly learned to escape shock by jumping over barrier

of the light on the wall). After the lights were dimmed, the electric shock followed 10 seconds thereafter. If the dog jumped over the partition, it escaped the shock. So, for all the dogs, the shock was both predictable and preventable (i.e., controllable) during the second phase of the study. If the dog failed to jump over the partition within 10 seconds, however, the electric shock started and continued for 1 minute.

A summary of the study's procedure and results appears in Table 9.2 (Seligman & Maier, 1967). The dogs in both the escapable shock and no shock groups quickly learned how to escape the shock in the shuttle box. When shocked, these dogs ran about frantically at first and then accidentally climbed, fell, scrambled, or jumped over the barrier. That is, through trial and error and through the sheer grit of determination, the dogs learned that if they somehow overstepped the barrier, they could escape the shock. After only a few trials, these dogs jumped over the barrier to safety as soon as the warning light dimmed. They learned mastery over the very stressful conditions. These dogs learned how to control (prevent) the shock.

The dogs in the inescapable shock group behaved very differently. When shocked, these dogs at first behaved as the other dogs did by running about frantically and howling. However, unlike the dogs in the other two groups, these dogs soon stopped running around and, instead, whimpered until the trial (and shock) terminated. After only a few trials, these dogs gave up trying to escape and passively accepted the shock. On subsequent trials, the dogs failed to make any escape movements at all. What these dogs learned in the shuttle box—that the onset, duration, intensity, and termination of the shock (in phase 1) were all beyond their control—had a carryover effect in the shuttle box: The dogs perceived that escape was beyond their control. These dogs learned helplessness in the face of very stressful conditions.

The startling generalization that emerged from this study is that whenever animals are placed in a situation in which they perceive they have little or no control, they develop the expectation that their future actions will have little or no effect on what happens to them. This learned expectation that one's voluntary behavior will not effect desired outcomes is the heart of learned helplessness.

Application to Humans

The early experiments on learned helplessness used animals as research participants mostly because the uncontrollable events used in these studies included traumatic events, such as electric shock. Later studies found ways to test the extent to which helplessness applied to humans (Diener & Dweck, 1978, 1980; Dweck, 1975; Hiroto, 1974; Hiroto & Seligman, 1975; Mikulincer, 1994; Peterson et al., 1993). In Donald Hiroto's (1974) experiment, irritating noise constituted the aversive, traumatic stimulus event. The results with humans paralleled the results with dogs (see Table 9.2) in that participants in the inescapable noise group sat passively and were unwilling to attempt an escape from the noise, whereas participants in the escapable and no-noise groups learned quickly to escape the noise (by operating a lever). Humans too learned helplessness.

To demonstrate how learned helplessness operates, try to solve problems that vary in how controllable they are: Can you solve academic problems? relationship problems? financial problems? health problems? If your car broke down on the highway, would you try to cope or would you turn passive?

Looking at the sequence of four cards shown in Figure 9.6, consider an experiment in which the participant's task is to figure out which feature the experimenter is looking for—triangle or square, dot or star, shaded or white. A series of 10 cards appear in

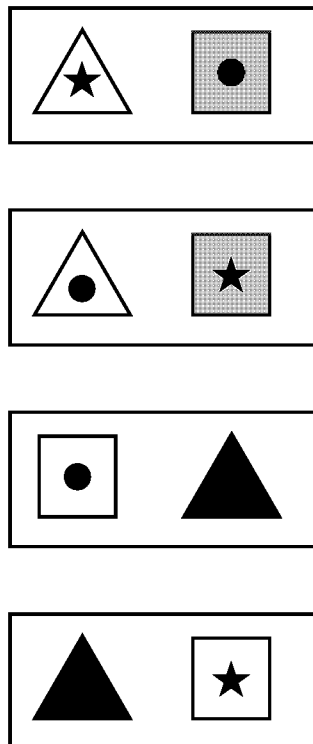


Figure 9.6 Sample of a Problem Used in the Study of Learned Helplessness with Humans

Source: From "An Analysis of Learned Helplessness: Continuous Changes in Performance, Strategy, and Achievement Cognitions Following Failure," by C. I. Diener and C. S. Dweck, 1978, *Journal of Personality and Social Psychology*, 36, pp. 451–462. Copyright 1978 by the American Psychological Association. Reprinted with permission.

sequential order and the participant's task is to identify which feature is being tracked. On the first card, he simply guesses "left" or "right," and the experimenter replies "correct" or "incorrect." The same procedure occurs for the following nine cards. For instance, a person who is tracking the hypothesis of "square" would choose right, right, left, and right (in the four cards shown in Figure 9.6).

Now imagine that in one condition, the experimenter (or a computer program) provided authentic feedback such that the participant could, with concentration and effort, use the feedback provided to figure out the answer to the problem. In other words, the problem is controllable, at least with concentration and effort. In a second condition, however, the feedback was random and bogus. With random feedback, the participant could try all the hypotheses in the world and only gain a sense of confusion and frustration for the effort. After several of these problems the second phase of the study begins as all participants (in both conditions) are asked to solve some moderately difficult problems (e.g., multiplication problems, six-letter anagrams). The consistent finding is that people exposed to solvable problems in the first phase of the study solve significantly more problems in the second phase than do people exposed to unsolvable problems in the first phase (Diener & Dweck, 1978). It is not so much how smart and clever the participant is that matters; instead, it is how responsive and controllable the environment is while one attempts to solve problems.

Components

Learned helplessness theory features three components: contingency, cognition, and behavior (Peterson et al. 1993). Collectively, these three components explain the motivational dynamics that unfold as experience teaches people to expect that the events in their lives will be beyond their personal control.

Contingency

Contingency refers to the objective relationship between a person's behavior and the environment's outcomes. The environment can be the home, classroom, workplace, sports field, hospital interpersonal relationship, psychology laboratory, and so on. Contingency exists on a continuum that ranges from outcomes that occur on a random, noncontingent basis (i.e., uncontrollable outcomes) to outcomes that occur in perfect synchronization with a person's voluntary behavior (i.e., controllable outcomes). That is, how contingent any one environment is can be scored on a continuum that ranges from 0 (uncontrollable outcomes) to 1 (controllable outcomes).

Take a moment to ask yourself what your own experiences have taught you about contingency in the following situations: getting a traffic ticket, getting a job in your hometown, winning a tennis match against a rival, winning the state lottery, catching the flu, getting cancer from smoking cigarettes, gaining weight over the holidays, and graduating from college. To characterize the contingency inherent in each of these situations, ask yourself the following: "To what extent does the average person's voluntary, strategic behavior influence the outcomes that occur in these settings?" That is, how much influence does voluntary coping behavior (from people in general, not from you in particular) exert on avoiding a traffic ticket, avoiding the flu, getting a job, winning a contest, winning the lottery, escaping cancer, preventing weight gain, and obtaining a college degree?

Cognition

A good deal of cognitive interpretation takes place between the actual, objective environmental contingencies that exist in the world and a person's subjective understanding of personal control in such environments. Mental events distort the relationship between objective contingencies and subjective understandings of personal control, and these events therefore create some margin of error between objective truth and subjective understanding.

Three cognitive elements are particularly important: biases (e.g., the "illusion of control"); attributions (explanations of *why* we think we do or do not have control); and expectancies, which are the subjective personal control beliefs we carry over from past experiences into our current situation. To illustrate the importance of cognition, ask two people who experience the same environmental contingency why they avoided a traffic ticket, avoided the flu, got a job, and so on. People's outcome beliefs (and hence their replies to your question) stem not only from the objective information about the world (i.e., contingency) but also from each person's unique biases, attributions, and expectancies. Hence, to understand learned helplessness, we need to pay attention not only to objective environmental contingencies (how controllable outcomes really are) but also to subjective personal control beliefs (how controllable the person thinks those outcomes are).

Behavior

Just as contingency exists on a continuum, coping behavior to attain or to prevent outcomes also exists on a continuum. In a traumatic event, for instance, people's voluntary coping behavior varies from very passive to very active.

Coping responses can be lethargic and passive, or coping responses can be active and assertive. Lethargy, passivity, and giving up typify a listless, demoralized effort that characterizes the behavior of the helpless individual (recall the passive behavior of the dogs in the inescapable shock group). Alertness, activity, and assertiveness characterize people who are not helpless (who have some expectation of control). To illustrate passive behavior as a component of learned helplessness, consider once again the situations listed earlier (driving on the highway, job hunting, competing against an opponent). Consider your own passive-to-active coping behaviors in the face of such situations and potential outcomes. The job hunter who quits reading newspaper advertisements, revising her résumé, telephoning prospective employers, and rising early and enthusiastically in the morning to look for a job manifests the listless, demoralized coping behavior that characterizes helplessness.

Effects of Helplessness

Learned helplessness occurs when people expect that their voluntary behavior will produce little or no effect on the outcomes they strive to attain or avoid. Once it occurs, it leaves three reliable deficits in its wake: motivational, learning, and emotional (Alloy & Seligman, 1979).

Motivational Deficits

Motivational deficits consist of a decreased willingness to try. Motivational deficits become apparent when a person's willingness to emit voluntary coping responses decreases or disappears altogether. Typically, when people care about an outcome and when the environment is at least somewhat responsive in delivering those outcomes, they act enthusiastically and assertively in bringing about those outcomes. For instance, at the beginning of a season, an athlete might practice diligently and persistently, but after a series of athletic defeats (victory becomes an uncontrollable outcome), willingness to practice wanes. The athlete begins to wonder if the time spent practicing is really worth it. In the learned helplessness experiment described in the preceding paragraphs, the experimenters asked participants why they did not try to terminate an unpleasant noise in the second phase of the study (Thorton & Jacobs, 1971). Approximately 60% of the participants (from the inescapable noise group) reported that they felt little control over the noise so did not see the point in trying to terminate the noise, saying "Why try?" Thus, "Why try?" characterizes the motivational deficit in learned helplessness.

Learning Deficits

Learning deficits consist of an acquired pessimistic set that interferes with one's ability to learn new response–outcome contingencies. Over time, exposure to uncontrollable environments cultivates an expectancy in which people believe that outcomes are generally independent of their actions. Once expectancies take on a pessimistic tone, the person has a very difficult time learning (or, more precisely, relearning) that a new response can affect outcomes. This pessimistic set essentially interferes with, or retards, the learning of future response–outcome contingencies (Alloy & Seligman, 1979).

When students first learn the results from learned helplessness experiments, they frequently wonder why dogs in the inescapable groups do not learn in the second phase of the experiment that jumping over the barrier terminates the shock. Like talking to a laid-off worker who has given up applying for a new job, one wants to yell (to the dog): "Jump! Jump! C'mon boy, just jump!"

Consider, however, what the human subjects learned during the first phase of the earphon session with the inescapable noise blast. The first time they heard the noise, they flinched and jumped, and the second time, they manipulated the lever. Perhaps they perceived that on some trials turning their heads or shifting their weight from side to side coincided with the turning off of the noise. But on later trials, they again turned their heads or shifted their weight, but the noise persisted for its programmed 5 seconds. Gradually, they learned that no response turned off the noise in a reliable way. They tried everything, but nothing worked. Consequently, when they entered the second phase of the experiment and happened to move the now-working lever, any positive outcome (turning off the noise) comes across as a "successful accident" and unworthy of being tried again (as were head turning, lever turning, weight shifting, and so forth in the first phase). Compared to the participants in the escapable noise and control groups who quickly learned to discriminate between responses that worked and responses that did not work, participants in the inescapable noise groups had an unusually difficult time learning an effective coping response.

Emotional Deficits

Emotional deficits consist of affective disruptions in which lethargic, depressive emotional reactions occur in situations that call for active, assertive emotion. In the face of trauma, the natural and typical human response is one of highly mobilized emotion (e.g., fear, anger, assertiveness, frustration). When afraid, people struggle vigorously to overcome, escape, counteract, or do whatever is necessary to cope effectively. Over time, however, an unrelenting onslaught of environmental unresponsiveness leads people to view coping as futile. Once fear-mobilized emotionality is believed to be unproductive, depression-related emotionality takes its place. Once the person becomes convinced that there is nothing that can be done to escape the trauma, the resulting expectation makes energy-mobilizing emotions less likely and makes energy-depleting emotions (e.g., listlessness, apathy, depression) more likely.

Helplessness and Depression

Some clinical psychologists view learned helplessness as a model of naturally occurring unipolar depression (Rosenhan & Seligman, 1984; Seligman, 1975). Learned helplessness and depression are similar in that the same expectations cause both: The individual expects that bad events will occur and there is nothing she can do to prevent their occurrence (Rosenhan & Seligman, 1984). Learned helplessness and depression also share common symptoms (passivity, low self-esteem, loss of appetite) and therapeutic intervention strategies (time, cognitive behavior modification).

Using the learned helplessness model to understand the etiology of unipolar depression touched off a flurry of research that brought both strong criticism (Costello, 1978; Depue & Monroe 1978) and strong support (Seligman, 1975). One of the most exciting findings to emerge is that depressed individuals sometimes see the events in their lives as less controllable than do individuals who are not depressed. Such a finding led researchers to wonder whether the depressive tendency of individuals to see their worlds as uncontrollable might be the core cause of unipolar depression. Perhaps the root of depression lies in a depressed individual's inability to recognize that he has more control over his life outcomes than he knows.

Depressed and nondepressed college students (as assessed by a questionnaire) performed a task in which they pushed a button on some trials and did not push it on other trials (Alloy & Abramson, 1979). With a button push, a green light sometimes came on. The point of the study was for the participant to estimate what proportion of time the green light came on. The experimenters controlled the outcome—whether or not the light came on and when it came on. For one group, the green light came on 75% of the time and only when the button was pressed. This was the high-control group. For a second group, the green light came on when the button was pressed 75% of the time, but the light also came on 50% of the time when no button was pushed. This was the low-control group. In a final group, the green light came on when the button was pressed 75% of the time, but it also came on 75% of the time when the participants did not push the button. This was the no-control group (because the light came on at the same rate regardless of the participant's button pressing).

Results were most surprising (see Figure 9.7). Depressed individuals accurately judged how much control they had over each situation, as did nondepressed individuals

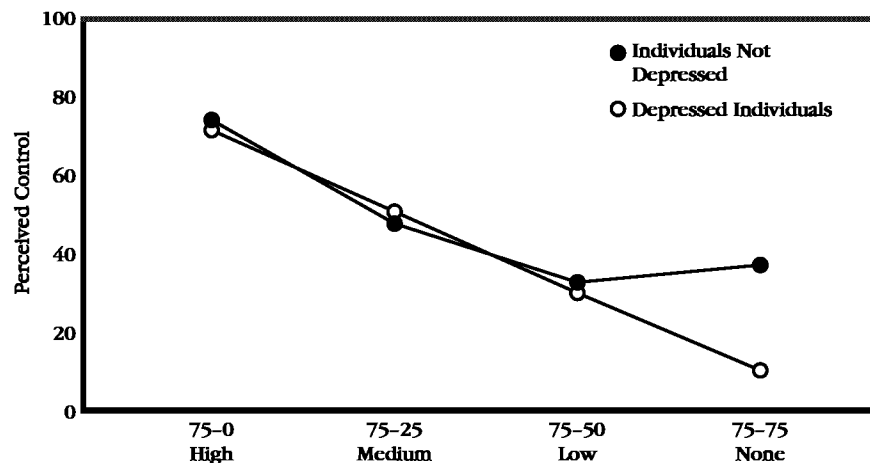


Figure 9.7 Perceived Control Judgments for Depressed and Nondepressed Individuals

Source: From “Judgments of Contingency in Depressed and Nondepressed Students: Sadder but Wiser?” by L.B. Alloy and L.T. Abramson, 1979, *Journal of Experimental Psychology: General*, 108, pp. 441–485. Copyright 1979 by the American Psychological Association. Adapted with permission.

except in one condition, namely in the no-control situation (Alloy & Abramson, 1979). The depressed individuals accurately judged that they had no control in this condition. The light came on in a random way, and they knew it. The nondepressed individuals were the ones who misperceived how much control they had—they overestimated their perceived control.

The most interesting conclusion to draw from Lauren Alloy and Lyn Abramson’s (1979, 1982) research is that people with depression are *not* more prone to learned helplessness deficits. Rather, it is the individuals who are not depressed who sometimes believe they have more personal control than they actually have (Taylor & Brown, 1988, 1994). Though the conclusion might sound startling, depressed persons’ memories for the positive and negative events in their lives are balanced and equal, whereas the memories of the nondepressed persons harbor biases for recalling more of the positive events (Sanz, 1996). While people misjudge the control they have over the events in their lives (Abramson & Alloy, 1980; Alloy & Abramson, 1979, 1982; Langer, 1975; Nisbett & Ross, 1980), most of the misjudging is done by nondepressed individuals, not by those who are depressed.

Explanatory Style

Explanatory style is a relatively stable, cognitively based personality variable that reflects the way people explain the reasons why bad events happen to them (Peterson & Barrett, 1987; Peterson & Park, 1998; Peterson & Seligman, 1984). Bad events happen to everyone, but people explain these setbacks with attributions that vary in their locus, stability, and controllability. An *optimistic explanatory style* manifests itself as the tendency to explain bad events with attributions that are unstable and controllable (e.g., “I lost the contest because of a poor strategy”). A *pessimistic explanatory style* manifests itself as the tendency to explain bad events with attributions that are stable and uncontrollable (e.g., “I lost the contest because I’m too small to compete”).

Pessimistic Explanatory Style

Academic failures, poor physical health, and subpar job performance are common. They happen to us all. Some of us react to such failures by increasing effort and by trying even harder than before. Others react by giving up. A pessimistic explanatory style predisposes people toward the latter response—giving up—in times of failure and setbacks.

When a student with a pessimistic style faces such educational frustrations and failures (e.g., disappointing grades, unintelligible lectures, confusing textbooks), she typically responds with a passive, fatalistic coping style that leads to decreased effort and deteriorating grades (Peterson & Barrett, 1987). As to job performance, one vocation with more than its share of frustrations, failures, and rejections is selling life insurance because only a small percentage of potential clients ever buy a policy. One pair of researchers assessed life insurance agents' explanatory styles and recorded which agents performed well or poorly and which agents stayed on the job or quit (Seligman & Schulman, 1986). The attributionally pessimistic agents were more likely to quit, and those attributional pessimists who continued to work performed significantly worse than did their more optimistic peers.

Overall, a pessimistic explanatory style is associated with academic failure (Peterson & Barrett, 1987), social distress (Sacks & Bugental, 1987), physical illness (Peterson, Seligman, & Vaillant, 1988), impaired job performance (Seligman & Schulman, 1986), depression (Beck, 1976), and even electoral defeat in presidential elections (Zulow, Oettingen, Peterson, & Seligman, 1988).¹

Optimistic Explanatory Style

The illusion of control is an attributional phenomenon that, over time, fosters an optimistic explanatory style. People with an optimistic explanatory style tend to take substantial credit for their successes but accept little or no blame for their failures (e.g., "It's not my fault that I am unemployed, divorced, broke, and had a car accident last month. I am, however, responsible for my team winning the softball game last night."). As you might expect, depressed individuals rarely have an optimistic style and are not vulnerable to the illusion of control (Alloy & Abramson, 1979, 1982).

Equipped with the self-serving bias of an illusion of control, people with an optimistic explanatory style readily ignore negative self-related information, impose distorting filters on incoming information, and interpret positive and negative outcomes in self-protecting ways. In one sense, an optimistic explanatory style is delusional. The extent to which a person harbors an optimistic explanatory style is correlated with both a full repertoire of excuses, denials, and self-deceptions (Lazarus, 1983; Sackeim, 1983; Tennen & Affleck, 1987) and narcissism (John & Robins, 1994). Narcissists hold a grandiose sense of self-importance, tend to exaggerate their talents and achievements, and expect to be

¹Care must be exercised in interpreting these correlational data, however, as it certainly could be the case that poor grades, nonresponsive partners, and difficulties at work lead individuals toward adopting a pessimistic style. Thus, one can say that a pessimistic style and mental and physical well-being correlate negatively, but one cannot say definitively that a pessimistic style causes mental and physical distress. Researchers continue to investigate the causal status of a pessimistic explanatory style in coping with life's setbacks (Peterson et al., 1993).

recognized as superior without commensurate achievements (Kohut, 1971; Millon, 1990; Westen, 1990). But most of us are not narcissists, at least not in the clinical sense of the term. For most of us (depressives and narcissists aside), an optimistic explanatory style is functionally an *asset*, because a “mentally healthy person appears to have the enviable capacity to distort reality in a direction that enhances self-esteem, maintains beliefs in personal efficacy, and promotes an optimistic view of the future” (Taylor & Brown, 1988).

Criticisms and Alternative Explanations

The learned helplessness model is not without its critics (Costello, 1978; Weiss, Glazer, & Pohorecky, 1976; Wortman & Brehm, 1975). The central question under debate is just what causes helplessness. In the learned helplessness model, helplessness follows from a cognitive event, namely the expectation of a response → outcome independence (recall Figure 9.4). But, learned helplessness experiments induce participants with trauma, and it could be that traumatic events themselves (e.g., shocks, noise blasts, unsolvable problems) induce helplessness. Through clever and sophisticated research designs (i.e., triadic design with a yoking procedure), researchers found that it was indeed the learned expectation, not the trauma itself, that produces helplessness (Weiss, 1972).

Other researchers argue that the expectation of failure, rather than the expectation of uncontrollability *per se*, induces helplessness. But investigators' clever research designed showed that failure, more often than not, actually produces a positive motivation (a phenomenon discussed in the next section under “Reactance Theory”) and that it is the expectation of uncontrollability, not the expectation of failure, that causes learned helplessness deficits (Winefield, Barnett, & Tiggemann, 1985).

Yet a third possibility is that uncontrollable events induce helplessness deficits not because they are uncontrollable but because they are unpredictable (Winefield, 1982). It is extremely difficult, and probably impossible, to separate uncontrollability from unpredictability, and research shows that predictability does indeed mitigate learned helplessness deficits. The conclusion is that perceived uncontrollability is a necessary, but not a sufficient, condition for inducing learned helplessness deficits. For sufficiency, uncontrollability must coincide with unpredictability (Tiggemann & Winefield, 1987). When life's rejections, losses, failures, and setbacks are perceived to be *both* uncontrollable and unpredictable, people are vulnerable to learned helplessness.

One alternative explanation for why people turn passive and give up in the face of uncontrollable outcomes is that people are actually motivated to remain passive. People are motivated to be passive if they sense that active responding will only make matters worse (Wortman & Brehm, 1975). In the face of a hurricane (an uncontrollable, unpredictable event), for example, it is possible that people are passive and helpless because they believe that negative outcomes will be more likely when they respond compared to when they do not respond. If this is the case, passivity is actually an enlightened strategic coping response that minimizes trauma. For a second example, imagine the socially anxious person who does not voluntarily engage in social interaction because of a belief that she will only make matters worse by initiating conversations. Perhaps this person is correct. By intentionally not initiating interactions, the anxious person may very well avoid making circumstances worse (by keeping secret her lack of social skill).

Thus, looked at in a different light, passivity can be, in some circumstances, a strategic coping response rather than a motivational deficit. This question of whether the exercise of personal control is always desirable is addressed in Box 9.

A second interpretation of helplessness argues that helplessness might fundamentally be a physiological, rather than a cognitive, phenomenon (Weiss, 1972). When animals experience inescapable shock, they experience a significant decline in the neurotransmitter norepinephrine (Weiss, 1972; Weiss et al., 1976; Weiss, Stone, & Harrell, 1970). Depletion of brain norepinephrine has been repeatedly associated with helplessness and giving-up responses (Weiss et al., 1976).

REACTANCE THEORY

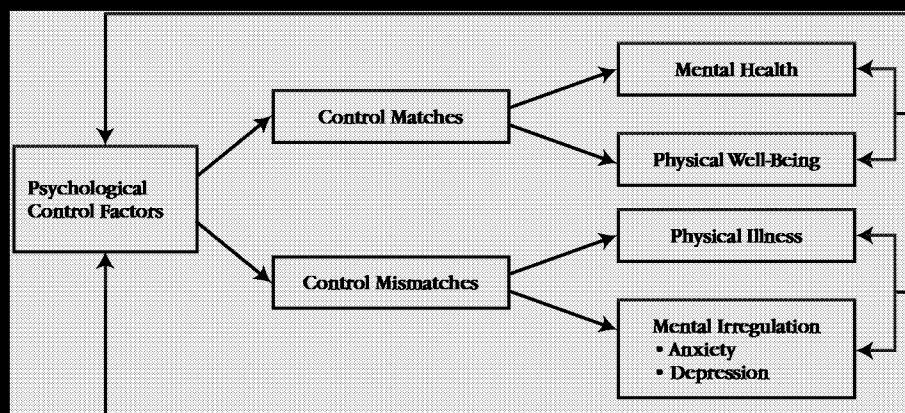
Why do people sometimes do precisely the opposite of what they are told to do? Why do people sometimes resist another person's well-intended favor? Why does propaganda frequently backfire? These are the questions posed by reactance theorists (Brehm, 1966; Brehm & Brehm, 1981). Any instruction, any favor, any advice, no matter how well intended, has the potential to interfere with people's expected freedoms in making up their own minds. When children do precisely what they were told not to do, when gift recipients are more resentful than thankful, and when the targets of propaganda do the opposite of the source's intention, each performs a counter maneuver aimed at reestablishing a threatened sense of freedom. The term *reactance* refers to the psychological and behavioral attempt at reestablishing ("reacting" against) an eliminated or threatened freedom.

Reactance and Helplessness

A threat to personal freedom often coincides with the perception of an uncontrollable outcome. Reactance theory predicts that people experience reactance only if they expect to have some control over what happens to them. And people react to a loss of control by becoming more active, even aggressive. Both reactance and learned helplessness theories therefore focus on how people react to uncontrollable outcomes. But the two theories suggest that people act in very different ways. Recognizing this discrepancy, Camille Wortman and Jack Brehm (1975) proposed an integrative model of reactance and learned helplessness, which is shown on page 258 in Figure 9.8.

If a person expects to be able to control important outcomes, exposure to uncontrollable outcomes arouses reactance (Wortman & Brehm, 1975). Thus, in the first few trials in a learned helplessness experiment, the person should show vigorous opposition to the uncontrollable environment. Recall that the dogs in the inescapable shock group in the learned helplessness studies first howled, kicked, and generally thrashed about for several trials before eventually becoming helpless. The two lines graphed between points A and B in Figure 9.8 represent reactance responses. These active, assertive coping efforts usually pay off in life as they enable people and animals to reestablish control. Over time, however, if the environment continues to be uncontrollable, people eventually learn that all attempts at control are futile. Once a person becomes convinced that reactance behaviors exert little or no influence over the uncontrollable situation, he shows the passivity of helplessness. The lines graphed to the right of point B represent helplessness responses.

BOX 9



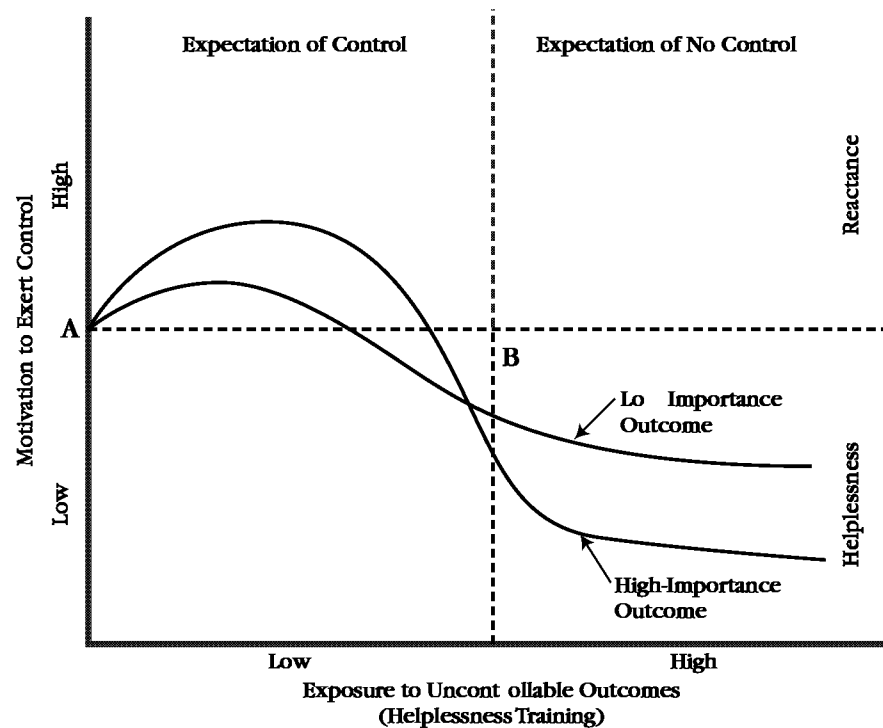


Figure 9.8 Integrative Model of Reactance and Learned Helplessness

Source: From “Responses to Uncontrollable Outcomes: An Integration of Reactance Theory and the Learned Helplessness Model,” by C. B. Wortman and J. W. Brehm, 1975, in L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 8, pp. 277–336); New York: Academic Press. Copyright 1975 Academic Press.

The critical difference in predicting whether an individual will show reactance or helplessness is the perceived status of the uncontrollable outcome. As long as the person perceives that coping behavior can effect outcomes, reactance behaviors persist. It is only after the person perceives a response–outcome independence (i.e., the unequivocal loss of a behavioral freedom) that he slips into helplessness. The critical information needed to interpret the relationships depicted in Figure 9.8 appears at the top of the figure, labeled “Expectation of Control” and “Expectation of No Control.” Expectations of control foster reactance; expectations of no control foster helplessness.

Notice also that the figure shows two curved lines, one denoting the relationship between perceived control and motivation for a low-importance outcome and the other depicting the same relationship for a high-importance outcome. Reactance and helplessness responses are exaggerated on those outcomes that the person most cares about and values, while reactance and helplessness are muted on low-importance outcomes (and may be zero for outcomes that have no importance to the person whatsoever; Mikulincer, 1986).

For an illustration of reactance and helplessness responses, consider the following experiment (Mikulincer, 1988). One group of participants worked on one unsolvable problem, a second group worked on a series of four unsolvable problems, and a third group did not work on any problems (control group). Mario Mikulincer (1988) reasoned that

exposure to one unsolvable problem would produce reactance and actually improve performance, while repeated exposure to unsolvable problems would produce helplessness and impair performance. In the second phase of the experiment, all participants worked on the same set of solvable problems. As predicted, participants given one unsolvable problem performed the best, participants given four unsolvable problems performed the worst, and participants not given any problems performed in between these two groups. This finding provides strong support for the ideas that (1) both reactance and helplessness arise from outcome expectancies; (2) reactance is rooted in perceived control, whereas helplessness is rooted in its absence; (3) a reactance response precedes a helplessness response; and (4) reactance enhances performance, whereas helplessness undermines it.

PUTTING IT ALL TOGETHER: HOPE

Hope emerges out of an integrated two-part cognitive motivational system. When people have both the motivation to work toward their goals and when people know ways to achieve those goals, they experience hope (Snyder, 1994; Snyder et al., 1991). The first part of hope involves high agency, or the “can do” belief relating to a person’s confidence or efficacy in their capacity to accomplish the goals they set for themselves. The second part of hope involves clear pathways, or the belief that one has multiple and controllable pathways to those goals.

In reference to the terminology used so far in this chapter, agency represents self-efficacy and pathways represents mastery motivation. Together, high self-efficacy supports confidence while a mastery motivational orientation supports optimism. A glance back to Figures 9.1 and 9.2 shows how efficacy and outcomes work together and when both are positive the overall emotional experience is one of hope.

Central (and somewhat uniquely) to the experience of hope is pathway thinking, or the belief that one can generate multiple viable routes to desired goals, as people say to themselves, “I’ll find a way to get this done” (Snyder, Lapointe, Crowson, & Early, 1998). The athlete preparing for a match or the salesperson trying to close a sale feels hope only when she can generate at least one, and often more than one, workable routes to the desired goal (scoring points, making a sale). Multiple pathways are important because environmental obstacles (opponent’s strategy, competitor’s products) often close off one pathway. Closing a pathway to a goal does not diminish hope if the performer has a number of alternative pathways to the goal. All goals have obstacles to their eventual attainment, so hope follows from knowing that one has more pathways to a goal than the environment has obstacles to block it.

Agentic thinking within the experience of hope reflects the performer’s perceived capacity to use those pathways to reach the goal, as people say to themselves, “I can do this” and “I am not going to let these obstacles stop me” (Snyder et al., 1998). As one pursues a pathway to a goal, agentic thinking (“Yes, I can do this”) functions as the antidote or counterforce to environmental obstacles (“No, you will not be able to do this”). Hopeful thinking emerges only out of *both* agentic and pathways thinking (Snyder, 1994).

In college, high-hope freshmen achieve higher GPAs and are more likely to graduate from college 5 years later than are low-hope freshmen (Snyder, Shorey, et al., 2002). During athletic performance, high-hope track athletes outperform low-hope athletes during stressful competitions (even after controlling for ability; Curry, Snyder,

Cook, Ruby, & Rehm, 1997). Facing physical illnesses (e.g., chronic pain, blindness), high-hope patients remain appropriately energized and focused on finding pathways to cope with their illness (Elliott, Witty, Herrick, & Hoffman, 1991; Jackson, Taylor, Palmatier, Elliott, & Elliot, 1998).

Why do high-hope individuals outperform and outcope their low-hope counterparts? High-hope persons (Snyder, 1994; Snyder et al., 1998; Snyder, Rand, & Sigmond, 2002):

1. Establish specific and short-term, rather than vague and long-term, goals.
2. Set mastery (learning), rather than performance, achievement goals.
3. Rely on internal self-set goals, rather than on external, other-set goals.
4. Engage goals with intrinsic, rather than extrinsic, motivation.
5. Are less easily distracted by external obstacles or by task-irrelevant (distracting) thoughts and negative feelings.
6. Generate multiple pathways and pursue other avenues when stumped rather than stick stubbornly with one approach.
7. Have reservoirs of internally generated determination (“I will get this done”; “Keep going!”).
8. See more meaning in their lives as they reflect back on their lifelong progress in constructing and attaining valued goals.

From a cognitive-motivational point of view, high-hope individuals tap into their motivational resources of confidence, self-efficacy, optimism, and a mastery motivational orientation. In doing so, they find the motivational support to overcome life’s challenges and obstacles. As one example, Rick Snyder appeared on *Good Morning America* and asked the host, the weatherman, and the show’s medical expert to engage in the cold pressor task—submerging their right hand into ice water for as long as they could (as told by Lopez, 2006). After a commercial break, the host asked Snyder what this had to do with hope. He explained that he asked each person to complete the self-report hope scale prior to the show. He then revealed the rank order of hope scores for the three cast members to show how well the hope scores predicted how long each person was able to withstand the numbing pain before quitting.

SUMMARY

The motivation to exercise personal control over one’s outcomes in life emanates from the expectations people harbor as to how much or how little influence they have in producing desired events and in preventing undesired events. As people try to control events, they learn expectancies about their control. Expectations come in two types: efficacy and outcome. Efficacy expectations are forecasts about one’s capacity to competently enact a particular course of action (e.g., “Can I do it?”). Outcome expectancies are forecasts that a particular outcome will be achieved (or prevented) once a given action is adequately executed (e.g., “Will it work?”). Before people are willing to exert strong coping efforts to exert personal control, both efficacy and outcome expectancies must be reasonably high (i.e., Self → Action → Control).

Self-efficacy is the individual’s belief that he “has what it takes” to marshal together the resources needed to cope effectively with the potentially overwhelming demands of a situation. Self-efficacy arises from (1) personal behavior history of trying to execute that particular course of

action in the past, (2) observations of similar others as they execute the same behavior, (3) verbal persuasions (or pep talks) from others, and (4) physiological states such as an abnormally fast versus calm heartbeat. Once formed, self-efficacy effects the performer's (1) choice of activities and selection of environments (approach vs. avoidance); (2) extent of effort, persistence, and resiliency; (3) the quality of thinking and decision making; and (4) emotional reactions, especially those related to stress and anxiety. Because self-efficacy beliefs can be acquired and because self-efficacy beliefs enable such productive ways of thinking, feeling, and behaving, self-efficacy serves as a model for personal empowerment. People who participate in therapy-like conditions (e.g., a mastery modeling program) to build stronger and more resilient self-efficacy beliefs respond by showing flexible, adaptive, and confident engagements with the world. Gains in self-efficacy counter and vanquish anxiety, doubt, and avoidance.

Learned helplessness is the psychological state that results when an individual expects that events in his or her life are uncontrollable. Helplessness is learned. As people learn that their behavior exerts a stronger influence over their outcomes than do outside influences, they learn a mastery motivational orientation. As people learn that their behavior exerts little or no influence over their outcomes while outside influences actually control what happens to them, they learn a helpless motivational orientation.

Three fundamental components explain learned helplessness effects: contingency, cognition, and behavior. Contingency refers to the objective relationship between a person's behavior and the environment's positive or negative outcomes. Cognition includes all those mental processes (e.g., biases, attributions, expectancies) the individual relies on to translate objective environmental contingencies into subjective personal control beliefs. Behavior refers to the person's voluntary coping behavior, and it varies along a continuum that extends from active and energetic to passive and withdrawing. Once it occurs, helplessness produces profound disruptions in motivation (decreased willingness to try) learning (pessimistic learning set that interferes with learning future response–outcome contingencies) and emotion (emergence of energy-depleting emotions such as depression to replace naturally occurring energy-mobilizing emotions such as frustration).

Reactance theory, like the learned helplessness model, explains how people react to uncontrollable life events. In short, expectations of controllability foster reactance, whereas expectations of uncontrollability foster helplessness. When confronting a situation that is difficult to control, individuals show an initial reactance response by becoming increasingly assertive in their psychological and behavioral attempts to reestablishing control. If reactance efforts fail to reestablish personal control, individuals then show a subsequent helplessness response.

Hope integrates the personal control beliefs literature by showing how agentic thinking (self-efficacy) and pathway thinking (mastery vs. helplessness) function together to provide energy and direction for one's coping efforts. High-hope individuals, who possess resilient self-efficacy and strong mastery motivation, outperform and outpace low-hope individuals in domains such as academics, athletics, and physical illness.

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Chapter 10

The Self and Its Strivings

THE SELF

The Problem with Self-Esteem

SELF-CONCEPT

Self-Schemas

Motivational Properties of Self-Schemas

Consistent Self

Why People Self-Verify

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IDENTITY

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SELF-REGULATION

Self-Regulation: Forethought through Reflection

Developing More Competent Self-Regulation

SUMMARY

READINGS FOR FURTHER STUDY

How have you been lately? Reflecting back on the last month, how many days have been happy ones? At school or work, how lively and satisfied have you felt? How are your relationships going? Are they providing you with experiences that leave you energized and fulfilled, or have they left you feeling mostly bland or frustrated? How are your personal finances? How is your health?

In the spirit of these questions, consider whether you agree or disagree with each of the following statements:

1. Many of my personal qualities trouble me enough that I wish I could change them.
2. I feel isolated and frustrated in interpersonal relationships.
3. When making important decisions, I rely on the judgments of others.
4. Often I am unable to change or improve my circumstances.
5. My life lacks meaning.
6. I have a sense of personal stagnation that often leaves me bored.

These six statements represent facets of psychological well-being. These are, in order, *self-acceptance*—positive evaluations of oneself; *positive interpersonal relations*—close, warm relationships with others; *autonomy*—self-determination; *environmental mastery*—sense of effectiveness in mastering circumstances and challenges; *purpose in life*—a sense of meaning that gives one's life a sense of direction and purpose; and *personal growth*—harboring a developmental trajectory characterized by improvement and growth (Ryff, 1989, 1995; Ryff & Keyes, 1995; Ryff & Singer, 2002). Your response on each of these dimensions reflects a distinct contour of self-functioning and psychological well-being. To be well psychologically is to possess positive self-regard, positive relationships, autonomy, mastery, purpose, and a trajectory of growth.

Pursuing these qualities is the province of the self. And your answers to these questions reveal how well or how poorly the self is doing its job.

Table 10.1 describes these six dimensions of self-functioning in greater detail. The self benefits in terms of well-being by making progress in any one of these areas, but the self that is able to make progress in a number of these dimensions benefits particularly well.

THE SELF

In a motivational analysis of the self and its strivings, four problems take center stage (Baumeister, 1987): (1) defining or creating the self, (2) relating the self to society, (3) discovering and developing personal potential, and (4) managing or regulating the self.

In the quest to define or create the self, we wonder about who we are, how others see us, how similar and how different we are from others, and whether we can become the person we want to be. In the quest to relate the self to society, we contemplate how we want to relate to others, what place we wish to occupy in the social world, and what societal roles are (and are not) available to us. In the quest to discover and develop the self, we explore what does and does not interest us, we internalize the values of those

Table 10.1 Six Dimensions of Psychological Well-Being**Self-Acceptance**

High scorer: possesses a positive attitude toward the self; acknowledges and accepts multiple aspects of self, including good and bad qualities; feels positive about the past.

Low scorer: feels dissatisfied with self; is disappointed with what has occurred in past life; is troubled about certain qualities; wishes to be different than what he or she is.

Positive Relations with Others

High scorer: has warm, satisfying, trusting relationships with others; is concerned about the welfare of others; capable of strong empathy, affection, and intimacy; understands give-and-take of human relationships.

Low scorer: has few close, trusting relationships with others; finds it difficult to be warm, open, and concerned about others; is isolated and frustrated in interpersonal relationships; is not willing to make compromises to sustain important ties with others.

Autonomy

High scorer: is self-determining; is able to resist social pressures to think and act in certain ways; regulates behavior from within; evaluates self by personal standards.

Low scorer: is concerned about the expectations and evaluations of others; relies on judgments of others to make important decisions; conforms to social pressures to think and act in certain ways

Environmental Mastery

High scorer: has a sense of mastery and competence in managing the environment; controls complex array of external activities; makes effective use of surrounding opportunities; is able to choose or create contexts suitable to personal needs and values.

Low scorer: has difficulty managing everyday affairs; feels unable to change or improve surrounding context; is unaware of surrounding opportunities; lacks sense of control over external world.

Purpose in Life

High scorer: has goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.

Low scorer: lacks a sense of meaning in life; has few goals or aims; lacks a sense of direction; does not see purpose in the past; has no outlooks or beliefs that give life meaning.

Personal Growth

High scorer: has a feeling of continued development; sees self as growing and expanding; is open to new experiences; has sense of realizing his or her potential; sees improvement in self and behavior over time; is changing in ways that reflect more self-knowledge and effectiveness.

Low scorer: has a sense of personal stagnation; lacks sense of improvement or expansion over time; feels bored and uninterested with life; feels unable to develop new attitudes or behaviors.

Source: From, Possible selves in adulthood and old age: A tale of shifting horizons, by C. D. Ryff, 1991, *Psychology and Aging*, 6, 286–295. Copyright 1991 by the American Psychological Association. Reprinted by permission.

we respect, we strive to create meaning, we seek to discover and develop our talents, and we devote our time to developing some skills and relationships rather than others. In the quest to regulate the self, we reflect on our capacities, monitor how well we are accomplishing our goals, and make the self-related adjustments that are needed to achieve enhanced self-functioning.

Defining or creating the self shows how *self-concept* energizes and directs behavior. Some aspects of self-definition are simply ascribed to us (e.g., gender). Other aspects, however, must be gained through achievement and through acts of choice (e.g., career, friends, values). This responsibility makes our lifelong quest to define and create the self a motivational struggle.

Relating the self to society shows how *identity* energizes and directs behavior. In some respects, society is rigid in the roles it encourages or even allows individuals to pursue. In other respects, however, society is flexible. It gives the individual some choice and even some responsibility in determining one's relationships to others (e.g., partners) and to society (e.g., careers). These acts of choice and internalization of responsibility make the effort to relate the self to society a motivational struggle.

Discovering and developing the potential of the self is also a motivational struggle, one that reflects *agency*. Agency means that an agent (the self) has the power and intention to act. It reveals the motivation inherent within the self. Hence, agency communicates a natural motivational force that originates from within the person rather than from the environment or culture. This developing sense of agency makes the potential of the self a motivational struggle.

Managing or regulating the self shows how *self-regulation* makes competent functioning more likely. Instead of acting impulsively, the self can evaluate its resources, monitor its goals, evaluate goal progress, and make the adjustments that are needed to enable more competent functioning. In doing so, the self often finds it useful to observe and emulate how other selves function well. Regulating one's goal pursuits and ongoing functioning makes self-regulation a motivational struggle.

The Problem with Self-Esteem

Before discussing self-concept, self-regulation, identity, and agency, it will be helpful to pause and challenge a cornerstone belief that many people endorse: Namely, the best way to increase another person's motivation is to increase his or her self-esteem. Teachers, employers, and coaches consistently and enthusiastically say that the way to motivate students, workers, and athletes is to increase their self-esteem. Make them feel good about who they are. Then watch as all sorts of wonderful things unfold.

Increasing self-esteem is a fine objective. It is, after all, correlated positively with being happy (Diener & Diener, 1996). The problem with boosting self-esteem as a motivational intervention, however, is that "there are almost no findings that self-esteem causes anything at all. Rather, self-esteem is caused by a whole panoply of successes and failures. . . . What needs improving is not self-esteem but improvement of our skills [for dealing] with the world" (Seligman, quoted in Azar, 1994). In other words, in the relationship between self-esteem and self-functioning, self-esteem is not a causal variable. It is more like a scorecard or a scoreboard that shows how well or how poorly things are going. In that spirit, one pair of researchers concluded that self-esteem "is mainly a

consequence of cumulative achievement-related successes and failures” (Helmke & van Aken, 1995).

The critical point to notice that is embedded within these two quotations is the direction of the causal effect between self-esteem and achievement/productivity. Self-esteem and achievement are correlated positively with one another (Bowles, 1999; Davies & Brember, 1999). However, increases in self-esteem do *not* produce corresponding increases in achievement; rather, increases in achievement produce corresponding increases in self-esteem (Helmke & van Aken, 1995; Marsh, 1990; Marsh & Craven, 2006; Marsh, Trautwein, Ludtke, Koller, & Baumert, 2006). Self-esteem reflects how life is going, but it is not the source of motivation that allows people to make life go well. There is simply no evidence that boosting people’s self-esteem will improve their functioning (Baumeister et al., 2003).

Low self-esteem is no bargain, as people low in self-esteem tend to suffer unusually high levels of anxiety. The chief benefit of high self-esteem is that it buffers the self against negative affectivity, such as depression (Alloy & Abramson, 1988) and anxiety (Greenberg et al., 1992; Solomon, Greenberg, & Pyszczynski, 1991). Thus, low self-esteem leaves the person vulnerable to the suffrages of anxiety and depression. But just because low self-esteem is bad does not mean that attempts to inflate self-esteem are good. In fact, inflated self-esteem actually has a dark side. People with inflated self-views are significantly more prone to aggression and acts of violence when their favorable self-views are threatened (Baumeister, Smart, & Boden, 1996). For instance, when people with very high self-esteem perceive they have just been publicly ridiculed or “dissed,” they become unusually prone to acts of retaliatory aggression. For these two reasons—gains in self-esteem do not cause anything good, and threats to an inflated self-view is a prelude to retaliatory violence—the crusade to boost self-esteem is overrated.

If the above logic is true, then it is worth asking how the “self-esteem movement” got started in the first place. The movement owes its roots to 1986 when the state of California decided to boost the self-esteem of all state residents as a strategy to reduce school failure, welfare dependency, crime, unwanted pregnancy, and drug addiction. The thinking was that virtually all psychological problems were traceable to a person’s low self-esteem (Branden, 1984). Following this lead (without any empirical evidence to support it), self-esteem boosting programs exploded on the scene in the form of programs such as Upward Bound, Head Start, the Early Training Project, and perhaps that in-class pep rally you endured in elementary school (“*I am somebody!*”). By the time empirical research caught up with these programs to test their effectiveness, results showed that these programs failed miserably to curb the sort of social problems identified by the California state legislatures (Baumeister et al., 2003).

In the end, the best conclusion to offer is that self-esteem is like happiness. Trying to be happy does not get you very far. Rather, happiness is a byproduct of life’s satisfactions, triumphs, and positive relationships (Izard, 1991). In the same spirit, self-esteem exists as an end product of the self’s adaptive and productive functioning. It is a byproduct of successfully measuring up to personal aspirations and to culturally mandated norms (Josephs, Markus, & Tafarodi, 1992). The same holds true for the six aspects of psychological well-being introduced earlier—self-acceptance, positive interpersonal relationships, autonomy, mastery, purpose, and personal growth. Each is largely a byproduct of other

pursuits. This chapter is about those “other pursuits”: (1) defining or creating the self (self-concept), (2) relating the self to society (identity), (3) discovering and developing the self’s potential (agency), and (4) managing or regulating the self (self-regulation).

SELF-CONCEPT

Self-concepts are individuals’ mental representations of themselves. Just as people have mental representations of other people (what teenagers are like), places (what the city of Chicago is like), and events (what Mardi Gras is like), people also have mental representations of themselves (what I am like). The self concept is constructed from experiences and from reflections on those experiences.

To construct a self-concept, people attend to the feedback they receive in their day-to-day affairs that reveals their persona attributes, characteristics, and preferences. The building blocks people use to construct and define the self come from specific life experiences, such as the following:

- During the group discussion, I felt uncomfortable and self-conscious.
- On the school field trip to the zoo, I did not talk very much.
- At lunch, I avoided sitting with others.

During times of reflection people do not remember the hundreds of individual life experiences. Rather, people aggregate these experiences into general conclusions. Over time, people translate their multitude of specific experiences into a general representation of the self (e.g., given my inhibited experiences in groups, at the zoo, and during lunch, I perceive myself as “shy”). It is this general conclusion (“I’m shy”), rather than the specific experiences (in groups, at the zoo, and at lunch), that people readily remember and use as building blocks for constructing and defining the self-concept (Markus, 1977).

Self-Schemas

Self-schemas are cognitive generalizations about the self that are domain specific and are learned from past experiences (Markus, 1977, 1983). The earlier generalization of being shy exemplifies a self-schema. Being shy is both domain specific (relationships with others) and learned from past experiences (during group discussions, field trips, lunchroom conversations). Being shy does not represent the self-concept, but it does represent the self in one particular domain—one’s relationships with others.

In athletics, a high school student constructs a domain-specific self-schema by looking back on the week’s experiences and recalling his last-place finish in a 100-meter dash, his abandonment of a mile run because of exhaustion, and his repeated crashes into the bar during the high jump competition. In a different domain such as school, however, the same student might recall scoring well on a test, answering all the questions the teacher asked, and having a poem accepted for a school publication. Eventually, if the experiences in athletics and in the classroom are consistent and frequent enough, the student will generalize a self that is, for the most part, incompetent in athletics but skillful in school. These generalizations (athletically inept; intellectually smart) constitute additional self-schemas in different domains.

The self-concept is a collection of domain-specific self-schemas. Which self-schemas are involved in the definition of the self-concept are those life domains that are most important to the person (Markus, 1977). The major life domains in early childhood, for instance, typically include cognitive competence, physical competence, peer acceptance, and behavioral conduct (Harter & Park, 1984). In adolescence, the major life domains generally include scholastic competence, athletic competence, physical appearance, peer acceptance, close friendships, romantic appeal, and behavioral conduct or morality (Harter, 1990). By college, the major life domains include scholastic competence, intellectual ability, creativity, job competence, athletic competence, physical appearance, peer acceptance, close friendships, romantic relationships, relationships with parents, morality, and sense of humor (Harter, 1990; Neemann & Harter, 1986). What this litany of major life domains shows is the range of self-schemas any one person is likely to possess at different stages in his or her life cycle. The specific life domains vary from one person to the next, but these domains illustrate the typical age-related structure of the self-concept (Harter, 1988; Kihlstrom & Cantor, 1984; Markus & Sientisk, 1982; Scheier & Carver, 1988).

Motivational Properties of Self-Schemas

Self-schemas generate motivation in two ways. First, self-schemas, once formed, direct an individual's behavior in ways that elicit feedback consistent with the established self-schemas. That is, because a person sees him- or herself as shy, that person directs his or her future behavior in interpersonal domains in ways that produce feedback that confirms the "I'm shy" self view. Shy people want to act in shy ways and thus receive social feedback that they are shy, just like humorous people want to act in humorous ways and receive social feedback that they are humorous. This is so because self-schemas direct behavior in ways that confirm our established self-view. In contrast, feedback that is inconsistent with the established self-schema produces a motivational tension. In short, when people behave in self-schema consistent ways, they experience a comfort from the consistency and self-confirmation; when people behave in self-schema inconsistent ways, they experience tension from the inconsistency and self-disconfirmation.

The basic idea behind self-schema consistency is that if a person is told she is introverted when she believes she is extraverted, that contradictory feedback generates a motivational tension. The tension motivates the self to restore consistency. An extravert who receives feedback that she is an introvert directs her behavior toward proving that she is indeed an extravert. Therefore, people behave in self-schema-consistent ways to prevent feeling an aversive motivational tension. If prevention does not work, then people behave in ways to restore self-schema consistency.

Second, self-schemas generate motivation to move the present self toward a desired future self. Much like goal setting's discrepancy-creating process (Chapter 8), an ideal possible self initiates goal-directed behavior. Thus, the student who wants to become an actor initiates whatever actions seem necessary for advancing the self from being a "student" to becoming an "actor." "Student" constitutes the present self, while "actor" constitutes the ideal self.

Seeking ideal possible selves is a fundamentally different motivational process than is striving to maintain a consistent self-view. Seeking possible selves is a goal-setting process that invites self-concept development (see the section, "Possible Selves"), whereas

seeking a consistent self-view is a verification process that preserves self-concept stability (see the section, “Consistent Self”).

Consistent Self

Once an individual establishes a well-articulated self-schema in a particular domain, he generally acts to preserve that self-view. Once established, self-schemas become increasingly resistant to contradictory information (Markus, 1977–1983).

People preserve a consistent self by actively seeking out information consistent with their self-concept and by ignoring information that contradicts their self-view (Swann, 1983, 1985, 1999; Tesser, 1988). It is psychologically disturbing to believe one thing is true about the self yet be told that the reverse is actually the case. Imagine the turmoil of the career politician who loses a local election or the turmoil of the star athlete who does not get drafted into the professional ranks. Inconsistency and contradiction generate an emotional discomfort that signals that consistency needs to be restored. It is this negative affective state that produces the motivation to seek self-confirmatory, and to avoid self-disconfirmatory, information and feedback.

To ensure that other people see us as we see ourselves, we adopt self-presentational signs and symbols that announce who we are (or think we are). Examples of such signs and symbols include the appearances we convey in our physical selves through clothes, dieting, weightlifting, cosmetic surgery, and even our possessions and the kinds of cars we drive. We also use external appearances to communicate to others our political preferences, social status, sexual preferences, and so forth. For instance, the person wearing a Green Bay Packers jacket sends a self-presentational message to others along the lines of, “I am a sports enthusiast and an athlete.” A bumper sticker on one’s automobile might communicate a similar message. In doing so, the person strives to develop a social environment that will feed back self-confirmatory information.

Furthermore, in the name of self-schema preservation, we intentionally choose to interact with others who treat us in ways that are consistent with our self-view, and we intentionally avoid others who treat us in ways that are inconsistent with our self-view, a process referred to as “selective interaction” (Robinson & Smith-Lovin, 1992; Swann, Pelham, & Krull, 1989). By choosing friends who confirm our self-view and by keeping our distance from those who contradict that self-view, we make self-confirmatory feedback more likely and we make self-disconfirmatory feedback less likely. Selective interaction explains a key reason why we choose particular friends, roommates, tutors, teachers, teammates, spouses, and so on—namely, because we use social interactions to maintain and verify our self-view (Swann, 1987). Selective interaction also explains why people tend to break up a relationship in which the other person sees the self differently than one sees oneself, as in divorce (De La Ronde & Swann, 1998; Katz, Beach, & Anderson, 1996; Schafer, Wickram, & Keith, 1996). By marrying one person rather than another, the individual selects an interaction partner who will be a source of self-consistent feedback; and by divorcing a marriage partner, the individual might be removing a source of self-discrepant feedback.

Despite preventive efforts, self-discrepant feedback does sometimes occur (as it did for the career politician and star athlete). The first line of defense in the effort to maintain a consistent self is to distort that information until it loses its status as discrepant

information. In the face of discrepant self-schema feedback, the individual may ask if the feedback is valid, if the source of the feedback is trustworthy, and how important or relevant this feedback is (Crary, 1966; Markus, 1977; Swann, 1983). For example, a student with a self-view of being intelligent but who fails a college course might functionally discredit that feedback by arguing against (1) its validity (i.e., the student scored as unintelligent only because she was too busy to focus), (2) the professor's judgment (i.e., the student thinks her professor is a nitwit), and (3) its importance or relevance (i.e., the student feels it is not what she knows but who she knows that is important). People also counter disconfirming feedback with compensatory self-inflation (Greenberg & Pyszczynski, 1985), self-affirmation (Steele, 1988), and a barrage of new behaviors to prove one's actual self-view (e.g., "No, no, here let me show you. . ."; Swann & Hill, 1982). What all these ways of maintaining self concept consistency have in common is that they marshal forward counter-examples and counter-explanations to essentially discredit the otherwise self-discrepant feedback. Once invalidated, self-discrepant feedback can be ignored and the self-view preserved.

An individual's confidence that his or her self-schema is valid and true constitutes "self-concept certainty" (Harris & Snyder, 1986; Swann & Ely, 1984). When high, self-concept certainty anchors stable self-schemas. Discrepant feedback rarely changes a stable self-schema. When low, however, discrepant feedback can eventually instigate self-schema change. Conflict between an uncertain self-schema and discrepant feedback instigates a "crisis self-verification" (Swann, 1983, 1999): How do we verify the accuracy of our self-view, given contradictory feedback and an uncertain self-view? People resolve the self-verification crisis by seeking out additional domain-relevant feedback (Swann, 1983), a sort of "best two out of three to break the tie" approach for figuring out who they are.

The rather complicated self-verification process appears in Figure 10.1. Individuals start with a representation of self (a self-schema) and a preference for self-confirmatory feedback, as illustrated at the top of the figure. So most everyday feedback takes place only between the two uppermost boxes in Figure 10.1 (Preference for Self-Confirmatory Feedback → Routine Self-Verification). Things begin to get complicated only after the appearance of self-discrepant social feedback ("Potent Self-Discrepant Feedback" in Figure 10.1). People handle mild self-discrepant information rather well (Swann & Hill, 1982), as discussed earlier with the marshaling forward of counter-evidence. The two arrows between Routine Self-Verification and Self-Confirmatory or Nonpotent Self-Discrepant Feedback play themselves out in daily life as people discredit discrepant feedback and marshal forward compensatory self-affirmations. Mild self-discrepant feedback is therefore rather easily integrated into routine self-verification. The effect of potent (strong) disconfirming feedback on self-schema change, however, is not so easily integrated. The effect of potent disconfirming feedback depends on self-concept certainty (the three triangles in the middle of the figure). When self-concept certainty is low (triangle on the left), potent feedback *can* overwhelm preexisting self-schemas and instigate self-concept change. When self-concept certainty is high (triangle on the right), however, potent feedback is evaluated as only one piece of information in the context of a lifetime of historical information (e.g., "I was outgoing this time, but I was not outgoing on 100 occasions in the past; therefore, I still think I am shy, all things considered").

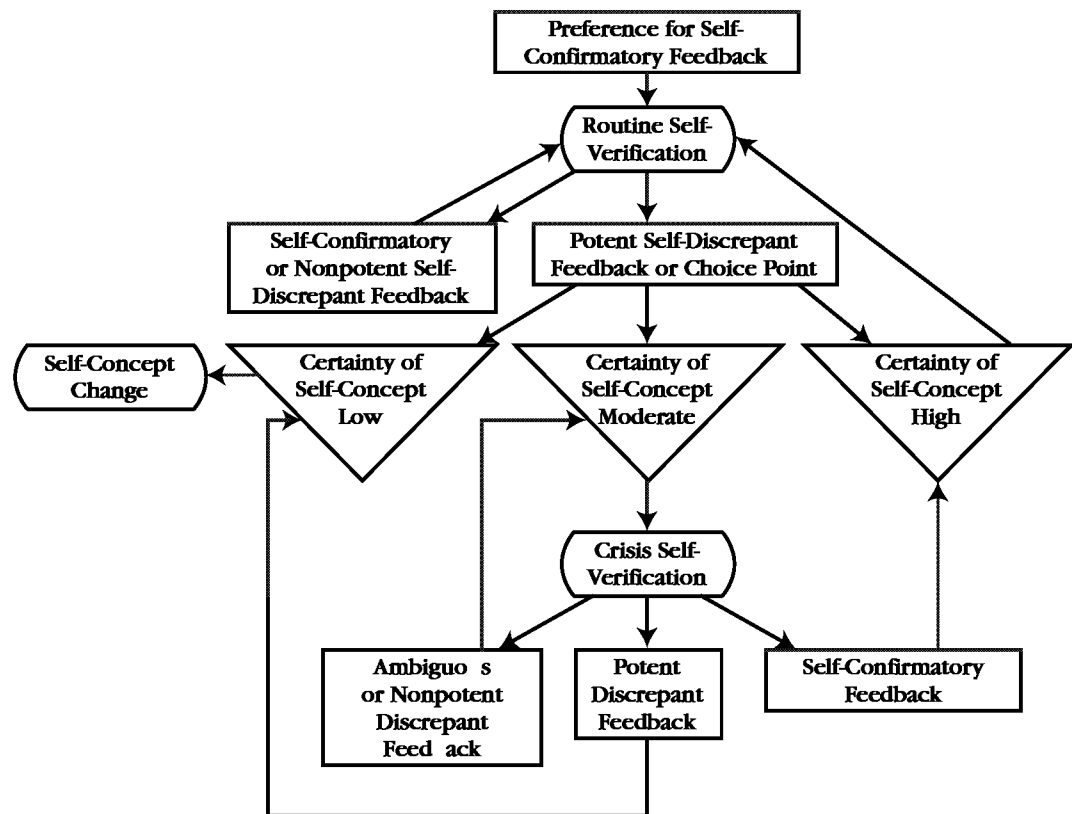


Figure 10.1 Processes Underlying Self-Verification and Self-Concept Change

Source: From “Bringing Social Reality Into Harmony With Self,” by W. B. Swann Jr., 1983, in J. Suls and A. Greenwald (Eds.) *Psychological Perspectives on the Self* (Vol. 2, pp. 33–66). Hillsdale, NJ: Lawrence Erlbaum.

The most interesting case, developmentally speaking, occurs when self-concept certainty is moderate (triangle in the middle). When self-concept certainty is moderate and the person faces potent self-discrepant feedback (as did the politician and athlete), the individual experiences the self-verification crisis. During a self-verification crisis, the individual suspends judgment and seeks out additional feedback. If the additional feedback is very convincing, the self-verification crisis does not change the self-view but instead lowers self-concept certainty. It is the lowered self-concept certainty that makes the person vulnerable to subsequent self-concept change in the future. Notice, for instance, that the only path to “Self-Concept Change” is from low self-concept certainty (as shown on the far left side of the figure). If the additional feedback is self-confirming, the “best two out of three tie” is broken in favor of the preexisting self-view and the self-verification crisis ends by strengthening self-concept certainty.

Before self-schemas change, (1) self-concept certainty must be low and (2) self-discrepant feedback must be potent and unambiguous—that is, difficult to discredit (Swann, 1983, 1985, 1987). Though self-concept can change, it is worth repeating that self-concept change is the exception rather than the rule. The rule is routine self-verification, a process that leads to a portrait of the self as an architect of its own design, so to speak—the self creates, builds, and maintains itself (McNulty & Swann, 1994).

Why People Self-Verify

People prefer self-verification feedback for cognitive, epistemic, and pragmatic reasons. On the cognitive side, people self-verify because they seek to know themselves (to be true to oneself; Swann, Stein-Servossi, & Giesler, 1992). Following epistemic concerns, people seek self-verification because verifications of the self bolster perceptions that the world is predictable and coherent (Swann & Pelham, 2002). On the pragmatic side, people self-verify because they wish to avoid interactions that might be fraught with misunderstandings and unrealistic expectations and performance demands; they seek interaction partners who know what to expect from them (Swann, 1992b, 1999; Swann & Pelham, 2002).

Possible Selves

Self-schemas sometimes change in response to social feedback (i.e., Figure 10.1). But it is much more likely that self-schemas change by a second, more proactive and intentional way. Self-schema change can occur through a deliberate effort to advance the present self toward a desired future possible self. Possible selves represent individuals' ideas of what they would like to become and also what they are afraid of becoming (Markus & Nurius, 1986; Markus & Ruvolo, 1989). Some hoped-for selves might include, for instance, the successful self, the creative self, the rich self, the thin self, or the popular self; some feared selves might include the unemployed self, the disabled self, the overweight self, or the rejected self.

Possible selves are mostly social in origin, as the individual observes the selves modeled by others (Markus & Nurius, 1986). The individual sees the current self as his or her "present state" and sees the role model as a desired, future "ideal self." Seeing the discrepancy the individual makes an inference that he or she could become, just like the successful role model became, that desired self. For instance, a child might watch performers in a musical and aspire to be a singer. One practical illustration of this is a jobs theme park for children in Tokyo ("Kidzania"). This indoor theme park provides an opportunity for children to try out being a pilot, dentist, engineer, and so forth, and it is hugely popular with children (and their parents!). Possible selves do not always arise from our observations of positive models, though, as a person might read in the newspaper of massive job layoffs and fear that she too could become unemployed. In this case, the individual sees the current self as his or her "present state" and sees the unsuccessful role model as an undesired future "feared self."

Possible selves represent the future self. The motivational function of a possible self therefore operates like that of a goal (or personal striving). A possible self provides the individual with an attractive incentive for which to strive. It can therefore act as a potent impetus for action by energizing effort and persistence and by directing attention and strategic planning (see Chapter 8).

Possible selves add an important piece of the puzzle in understanding how the self develops. Possible selves are essentially mental representations of attributes, characteristics, and abilities that the self does not yet possess (e.g., "I would like to become a physician, though I don't know much about human anatomy or surgical techniques"). When the self does not have the evidence or feedback to confirm the emerging possible self, one of two outcomes follows (Markus, Cross, & Wurf, 1990). On the one hand,

BOX 10

an absence of supportive evidence (or the presence of disconfirming feedback) will lead the self to reject and abandon the possible self. On the other hand, the possible self can energize and direct action so that the attributes, characteristics, and abilities of the self actually begin to materialize (Cross & Markus, 1994; Nurius, 1991; Oyserman & Markus, 1990). Thus, the possible self's motivational role is to link the present self with ways to

become the possible (ideal) self. Hence, an individual pursuing a possible self relies little on the present self-schema and much on the hoped-for self, possibly asking questions such as the following: If I am going to become my possible self, then how should I behave? What activities should I pursue? What education do I need? (Cantor, Markus, Niedenthal, & Nurius, 1986; Markus & Nurius, 1986; Markus & Wurf, 1987). As these questions imply, advancing oneself toward an ideal self requires not only a possible self to strive for but also effective strategies for how one is to get there (Oyserman, Bybee, & Terry, 2006).

The notion of possible selves portrays the self as a dynamic entity with a past, present, and future (Cantor et al., 1986; Day, Borkowski, Punzo, & Howsepian, 1994; Ryff, 1991). The individual without a possible self in a particular domain lacks an important cognitive basis for developing abilities in that domain (Cross & Markus, 1994). An individual who can envision a possible self in the domain engenders feelings of competence and acts to attain the future view of self (Cross & Markus 1991, 1994; Markus et al., 1990). Perhaps, the reader can look back at his or her own effort devoted to college courses and ask the following: To what extent did a possible self relate to each course I completed or dropped, to each book I have or have not read, and to each lecture I attended or skipped? The presence of a possible self creates a proactive motivation to develop the self in goal-directed ways.

Cognitive Dissonance

Most people harbor a rather favorable view of themselves. Most people see themselves as competent, moral, and reasonable. Such a self-view is represented cognitively as a set of beliefs about the self. Sometimes, however, people engage in behavior that leaves them feeling stupid, immoral, and unreasonable. For instance, people smoke cigarettes, toss litter, tell white lies, neglect to recycle, drive their cars recklessly, skip classes, act rudely toward strangers, and engage in other such hypocritical conduct. When beliefs about who the self is and what the self does are inconsistent (i.e., believing one thing, yet actually behaving in the opposite way), people experience a psychologically uncomfortable state referred to as “cognitive dissonance” (Aronson, 1969, 1992, 1999; Festinger, 1957; Gerard, 1992; Harmon-Jones & Mills, 1999).

With cognitive consistency, two beliefs are consonant when one belief follows from the other (being a moral person and telling the truth). With cognitive dissonance, two beliefs are dissonant when the opposite of one belief follows from the other (being a moral person but lying). Just how psychologically uncomfortable cognitive dissonance is depends on its magnitude. When intense and uncomfortable enough, dissonance takes on motivational properties, and the person begins to seek ways to eliminate, or at least reduce, the dissonance.

Imagine the following scenario of a woman whose sense of self includes pro-environmental beliefs. She believes in clean water, clean air, clean land, energy conservation, and nature preservation. And she believes that polluted air, polluted land, energy consumption, and overdevelopment are immoral and unreasonable. Her pro-environmental beliefs are all consonant with one another (i.e., believing in clean water is consistent with believing in nature preservation). But suppose she reads an article in the newspaper that says that automobile exhaust fumes are rapidly and irreversibly

depleting the ozone layer. Furthermore, according to the article, used automobile tires are littering the rivers and crowding the landfills. Suppose further that this environmentalist drives her car to work every day, and she needs her car for many additional purposes as well. She loves the environment, but she needs her car. She believes one thing, but she does another. This is an air of hypocrisy, and it is this experience of hypocrisy between self and action that causes dissonance (Aronson, 1999; Fried & Aronson, 1995).

The experience of dissonance is psychologically aversive (Elliot & Devine, 1994). People seek to reduce it (Gerard, 1992; Harmon-Jones & Mills, 1999), and they do so in one of four ways (Festinger, 1957; Harmon-Jones & Mills, 1999; Simon, Greenberg, & Brehm, 1995):

- Remove the dissonant belief
- Reduce the importance of the dissonant belief
- Add a new consonant belief
- Increase the importance of the consonant belief

Our environmentalist, for instance, might (1) quit driving her car and start riding a bicycle, or she might come to believe that volcano ash, not automobile exhaust, is responsible for the hole in the ozone layer (thereby removing the dissonant belief); (2) trivialize her immoral or unreasonable act of driving by justifying that her driving to work will have no impact on the global condition, especially when considering how much worse pollution is at factories and refineries (thereby reducing the importance of the dissonant belief; Simon et al., 1995); (3) read articles that reassure her that science is hard at work and will soon solve the pollution problem, or she might think of how truly enjoyable and useful it is to drive her car (thereby adding a new consonant belief, or two); or (4) think to herself that car exhaust proves that the city needs more bike trails, and the government needs emission-control device laws for all automobiles (thereby increasing the importance of the consonant belief). How resistant to change these beliefs are depends on (1) how close to reality they are (e.g., Will science really find a solution?), (2) how important or central they are to one's view of the self (Simon et al., 1995; Thibodeau & Aronson, 1992), and (3) how much pain and cost must be endured (e.g., How painful will it be to quit driving a car?). Therefore, reality, importance, and personal costs work to support one's current beliefs, while dissonance stirs up a belief system that puts pressure on hypocritical ways of thinking and behaving. It is a psychological competition—reality versus dissonance—with motivational implications.

Dissonance-Arousing Situations

Human beings frequently encounter information or engage in behavior that is dissonant with their beliefs and values. When facts or behaviors are in opposition to one's beliefs and values, people will find—or invent—a way to reconcile them. Four dissonance-arousing circumstances that bring on this “I did one thing, yet believe the opposite” experience include choice, insufficient justification, effort justification, and new information.

Choice. People often choose between alternatives. In some cases, the choice between alternatives is easy, as the merits of one alternative far outweigh the merits of its rival. In other cases, the choice is not so easy, as both alternatives offer a number of advantages and disadvantages. Once such a difficult choice is made, people experience dissonance (or “post-decision regret”). Dissonance is resolved by appreciating the chosen alternative—viewing it more positively, and by depreciating the rejected alternative—viewing it more negatively (Brehm, 1956; Gilovich, Medvec, & Chen, 1995; Knox & Inkster, 1968; Younger, Walker, & Arrowood, 1977). To illustrate this process for yourself, simply ask a person both before and after acting on a difficult choice the following question: “How sure are you that your choice is the correct one?” Whether the choice involves deciding between restaurants, classes, or marriage partners, post-choice decision makers are invariably more confident in the wisdom of their choices than are those still in the decision-making process.¹ Also, notice when people are more likely to read a product advertisement—before the purchase or after it. Strangely, but consistent with cognitive dissonance theory, people are more likely to read dissonance-soothing advertisements after (not before) purchasing a product.

Insufficient Justification. Insufficient justification addresses how people explain their actions for which they have little or no external prompting (Festinger & Carlsmith, 1959). For example, people might ask themselves why they donated money to a charity or why they stopped to pick up litter. To justify such unprompted action, people routinely and perhaps necessarily add new consonant beliefs, such as “I’m generous” and “I’m an environmentalist.”

Effort Justification During initiation rituals in the military, fraternities, sororities, athletic teams, neighborhood gangs, reality television shows, and other groups, recruits often exert great effort and perform extreme behaviors that must later be justified. Consider the Army private who parachutes out of an airplane as part of boot-camp training. For novice recruits, parachuting is extreme behavior. To justify why they would put their lives on the line like this, privates typically endorse a rather extreme liking for the behavior. Extreme behaviors breed extreme beliefs: “If I did *that*, then I must really *love* this place!” Dissonance theory proposes that the attractiveness of a task increases as a direct function of the magnitude of effort expended to complete it (Aronson & Mills, 1959; Beauvois & Joule, 1996; Rosenfeld, Giacalone, & Tedeschi, 1984). People who engage in extreme behavior need to develop correspondingly extreme values (Aronson, 1988).

New Information. As you listen to the radio, watch television, attend lectures, read the newspaper, and interact with others, you expose yourself to opportunities to contradict your beliefs. One group of researchers followed the Seekers, a cult-like group convinced that their city and the entire western coast of the Americas would be destroyed by a great flood on a specific day (Festinger, Riecken, & Schachter, 1956, 1958). On the day

¹A good illustration of this phenomenon is the often heard (yet absurd) quote from a person looking back on life, “If I had to live my life over again, I wouldn’t change a thing—not where I lived, what school I attended, who I married, which career I pursued, nor anything I said or did.”

before the flood, the group was told that a man would appear at the leader's house at midnight to take them to a flying saucer. Midnight came and passes with no knock on the door, so the Seekers found their cherished belief of doom unequivocally disconfirmed. Given belief disconfirmation, what were the dissonance-suffering Seekers to do? A few did reject their belief and dropped out of the group. Most Seekers, however, were more rationalizing than rational. They saw the disconfirmation as a test of their commitment to the cause (the world was saved because of their faith!) and responded with strong, persistent attempts at proselytizing. By proselytizing, the latter group tried to resolve their dissonance by adding new consonant beliefs (i.e., new people who would agree with their beliefs). Quite literally, each new convert allowed the Seekers to reduce their dissonance that the predicted cataclysm never materialized.

Motivational Processes Underlying Cognitive Dissonance

People engage in all sorts of behaviors that imply that they are incompetent, immoral, or unreasonable. Inconsistency between what one believes (I am competent) and what one does (I acted incompetently) creates the cognitive inconsistency that is dissonance. In the face of dissonance-arousing situational events, like the four discussed above, however, cognitive inconsistency and dissonance motivation arise and motivate changes in ways of believing or behaving. Being psychologically uncomfortable, people implement various strategies for reducing dissonance (as discussed earlier: remove the dissonant belief, add a new consonant belief, etc.). An overview of the psychological processes underlying dissonance motivation and people's attempts to reduce or eliminate it appears in Figure 10.2 (Harmon Jones & Mills, 1999).

Most dissonance researchers portray dissonance motivation through the analogy of pain—the person changes beliefs or behaviors in order to eliminate the aversive, persistent, and uncomfortable experience. But this characterization of an aversive motivational state is not all gloom and doom. Dissonance can be used to accomplish productive social goals too. For instance, using a dissonance framework, researchers have been successful in changing people's attitudes and behaviors toward pro-social causes such as using condoms during sex (Aronson, Fried, & Stone, 1991), conserving natural resources (e.g.,

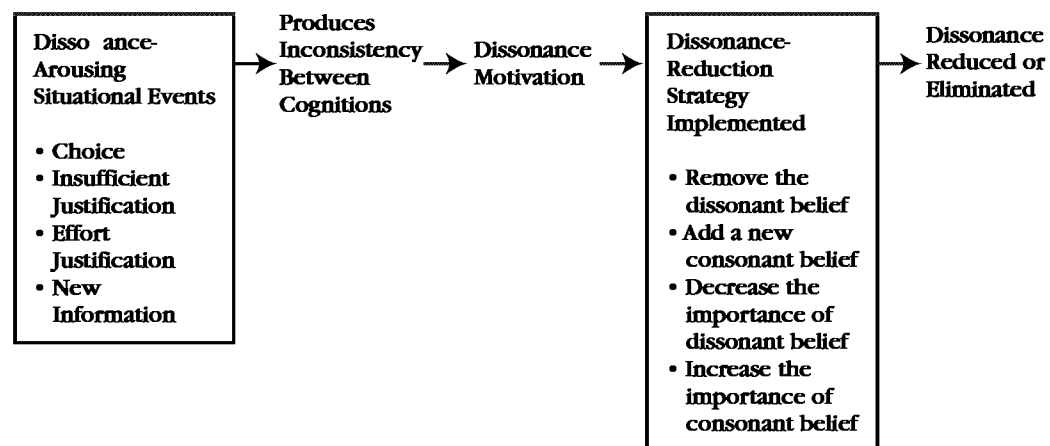


Figure 10.2 Cognitive Dissonance Processes

water; Dickerson, Thibodeau, Aronson, & Miller, 1992), and reducing prejudice (Leippe & Eisenstadt, 1994). The conclusion from each of these three experiments may be summarized succinctly as follows: "Saying, or doing, is believing." Beliefs follow from (and act to justify) what one says and does. For instance, if you join your friend while she walks in the multiple sclerosis walk-a-thon, your attitude toward people with multiple sclerosis will probably start to change for the better (i.e., add a new consonant belief to justify the effort). The fact that you walked in a charity's marathon is effort that needs to be justified, especially if it rained.

Self-Perception Theory

Cognitive dissonance theory argues that people develop and change their beliefs in response to a negative emotional state born in cognitive contradiction (i.e., dissonance). Self-perception theory offers the alternative interpretation that people develop and change their behavior based simply on self-observation of their own behavior (Bem, 1967, 1972; Bem & McConnell, 1970). For example, we eat squid for whatever reason (maybe we did not know it was squid because the restaurant referred to it as calamari) and after doing so we presume that since we ate squid, we must therefore like it. Both cognitive dissonance theory and self-perception theory revolve around the tenet that "saying, or doing, is believing." The difference between the two theories is that cognitive dissonance theory argues that beliefs change because of negative affect from cognitive inconsistencies, whereas self-perception theory argues that we simply come to believe whatever we do and say.

The dissonance versus self-perception debate generated a great deal of research (Elliot & Devine, 1994; Fazio, Zanna, & Cooper, 1977, 1979; Ronis & Greenwald, 1979; Ross & Shulman, 1973; Snyder & Ebbesen, 1972; Zanna & Cooper, 1976). The conclusion was that both cognitive dissonance and self-perception theories are correct, but each applies to a different set of circumstances. Self-perception theory applies best to situations in which people's beliefs are initially vague, ambiguous, and weak. In such cases, people do indeed draw inferences about themselves from their behavior. On the other hand, dissonance theory applies best to situations in which people's beliefs are initially clear, salient, and strong. In the domains of the self-concept, people hold well-entrenched self-views that do produce negative emotion following counter-attitudinal behavior.

IDENTITY

A second major aspect of the self is identity. Identity is the means by which the self relates to society, as it captures the essence of who one is within a cultural context (Deaux, Reid, Mizrahi, & Ethier, 1995; Gecas & Burke, 1995). Of course, people have unique personality traits and strivings, but people also are members of social and cultural groups. These cultures and social groups offer identities to their individual members, and it is within this cultural or social context that people play out a culturally or socially defined role. Once a person inhabits a role (e.g., student, mother, salesperson, musician, liberal, Southerner), the identity directs the person to pursue some behaviors (identity-confirming behaviors) and to avoid other behaviors (identity-disconfirming behaviors).

Roles

A role consists of cultural expectations for behavior from persons who hold a particular social position (Gross, Mason, & McEachern, 1958). Each of us holds a number of different social positions (roles), and which role we inhabit at any given time depends on the situation we are in and the people with whom we are interacting. For instance, in a college classroom, you probably assume the role of student as you interact with other students and with a professor. From a sociological point of view, it is not so much that Joe is interacting with Mary, Sue, and Jamar (individuals with unique motives and personalities) as it is that an inhabitant of the “professor” role interacts with several inhabitants of the “student” role. When you leave the classroom and go to your job at the psychology clinic, the role you occupy is very likely to change as you might assume the role of a counselor as you interact with clients. At home, your role and the roles of those you interact with might change yet again as you assume the role of mother (or father) who interacts with a daughter.

While assuming one role rather than another, people change how they act. They change the topic of their conversation, the vocabulary they use, the tone of their voice, and so forth. Even though “Mary” is still the same person, she converses in very different ways when she finds herself in the role of “professor” versus “mother.” Behavior varies to such an extent from one role to the next that it makes sense to speak of a person’s set of identities rather than his or her identity. Individuals have many identities, and they present to others the particular identity that is most appropriate for the situation. For instance, if you telephone an office, the person who answers your call is likely assuming a role of a receptionist. Figuring out who you are (what role the situation places you in) and who it is you are talking to is a burden placed on the person answering the phone.

Perhaps that sounds silly, but deciding what to say and what to do is actually quite difficult when the identities of the self and others remain in question. Knowing what roles the self and others hold in a given situation tells interactants which behaviors and which ways of interacting are most and least appropriate (Foote, 1951). Once you know that a “client” is telephoning a “receptionist,” both people know how to behave, what to say, and how the conversation will go. The client expresses behaviors that are consistent with a client role, and the receptionist expresses behaviors that are consistent with that role.

Sociologists refer to this process of figuring out roles as the “definition of the situation” (Goffman, 1959; Gonas, 1977). Whenever people participate socially, their first task is to define the roles for the self and for others. Once done, social interaction can proceed to the extent that both interactants agree on their identities and on the definition of the situation.

Identity-Confirming Behaviors

Human beings possess a wide range of potential behaviors, but only a subset of those behaviors are appropriate and expected in any one particular setting. Precisely which behaviors and emotions are most appropriate is determined by the identity the person inhabits. Once that situationally and culturally appropriate identity has been established, people’s behavior can be predicted and understood. Nice identities lead people to behave

in nice ways, powerful identities lead people to behave in powerful ways, passive identities lead people to behave in passive ways, and so on. Identities direct behavior, and behaviors maintain and confirm identity (Heise, 1979; Robinson & Smith-Lovin, 1992). The corresponding prescription for how to motivate others is therefore the following: If you want people to be nice, place them into an identity that the culture sees as nice (“teammate”). If you want people to be assertive, place them into an identity that the culture sees as assertive (“the boss”). If a teacher wants her students to show strong initiative and creativity, she might put them into the role of “detectives.” An athletic coach can generate extra initiative from an athlete by putting him or her in the role of “team captain” or “coach for a day.”

Identity-Restoring Behaviors

If a person behaves in an identity-inconsistent way (e.g., a mother scolds her child), she can restore the original identity either through restorative behaviors (e.g., nurture and soothe the child) or restorative emotional displays. That is, both behavioral displays and emotional displays provide identity-relevant information of who that person is. Consider how people use strategic emotion displays to restore their identities (Robinson, Smith-Lovin, & Tsoudis, 1994). Emotion displays act as public identity cues such that good people who act bad should show sorrow if they are truly good people (just as bad people who act bad should show no such sorrow if they are truly bad people). If a good person commits a bad act and does not show remorse, an observer is left to wonder whether that person really is a good person or not. Good people should display deep remorse following a deviant act, whereas bad people should display little post-behavior remorse. Notice here that the behavior is known, the emotion is observed, and the underlying identity is the only unknown. The mental calculus is to use the behavior and the emotion to figure out what the underlying character (identity) of the person must be. Hence, behaviors and emotions can be used to restore one's identity.

AGENCY

The self presented thus far has been a cognitive and social one. But the self goes deeper than just cognitive structures (self-concept) and social relationships (identity). Within the self is an intrinsic motivation that gives it a quality of agency (Ryan, 1993). Agency entails action (deCharms, 1987). This section presents a view of self “as action and development from within, as innate processes and motivations” (Deci & Ryan, 1991).

The self does not enter into the world *tabula rasa*—an empty slate—awaiting life experiences to endow it with a self-concept and with cultural identities. Rather, the newborn possesses a rudimentary, nonlanguage-based self that is characterized by inherent needs, developmental processes, preferences, and capacities for interacting with the environment. As the newborn taps into her inborn capacities (e.g., walking, talking, intrinsic motivation), the self begins the lifelong process of discovering, developing, and fulfilling her potential. In doing so, the self begins to advance away from heteronomy (a dependence on others) toward autonomy (a reliance on self), on the way to becoming a “fully functioning person” (Rogers, 1961; Ryan, 1993).

Self as Action and Development from Within

Chapter 6 discussed the organismic psychological needs of autonomy, competence, and relatedness—needs that provide a natural motivational force to foster agency (i.e., initiative, action). Intrinsic motivation is inseparably coordinated with the active nature of the developing self (Deci & Ryan, 1991). It is the source of motivation that underlies agency as it spontaneously energizes people to pursue their interests, seek out environmental challenges, exercise their skills, and develop their talents.

Differentiation and Integration

Differentiation and integration are two processes inherent within agency that guide ongoing motivation and development. Differentiation expands and elaborates the self into an ever-increasing complexity. Integration synthesizes that emerging complexity into a coherent whole, thereby preserving a sense of a single, cohesive self.

Differentiation proceeds as the individual exercises existing interests, preferences, and capacities in such a way that a relatively general and undifferentiated self becomes specialized into several life domains. For an illustration, consider your own history in which you learned that not all computers are alike, not all sports are alike, not all politicians are alike, not all relationships are alike, and not all religions are alike. Minimal differentiation manifests itself in simplicity in which the person has only a unidimensional understanding of a particular domain of knowledge; rich differentiation manifests itself in understanding fine discriminations and unique aspects of a particular life domain. The same holds true for differentiation of the domains of the self-concept. Intrinsic motivation, interests, and preferences motivate the self to interact with the world in such a way that sets the stage for the self to differentiate into an ever-increasing complexity. For instance, the child with an interest in model airplanes skims through catalogues, attends club meetings, talks with peers about model building, subscribes to a topical magazine, experiments with new materials and with various construction techniques, and basically develops specialized skills while learning. It is the self's intrinsic motivation that gives it the agency it needs to skim through catalogues, attend club meetings, talk to peer, and so on, and it is this ongoing and agentic stream of experience that allows the self to differentiate and grow in complexity.

Differentiation does not expand the complexity of the self unabated. Rather, there exists a synthetic tendency to integrate the self's emerging complexity into a single sense of self, into a coherent unity. Integration is an organizational process that brings the self's differentiated parts together. Integration occurs as the self's individual parts (i.e., self-schemas, identities, interests, etc.) are successfully interrelated and organized as mutually complementary.

The notions of agency (via intrinsic motivation), differentiation, and integration argue that the self possesses innate aspects. Psychological needs and developmental processes provide a starting point for the development of the self. As individuals mature, they gain increasing contact with the social context, and some of these aspects of the social world become assimilated and integrated into the self-system. The motivational portrayal of self-development therefore argues strongly against the idea that the self is merely a passive recipient of the social world's feedback (self-schemas) and identities (places in the social order). The self is a recipient of social feedback (hence, self-concept) and the

self does exist within an array of social relationships (hence, identifies), but the self also actively develops via its inherent agency. An understanding of the developing agentic self therefore begins by adopting the frame of reference of the individual rather than that of the society (Deci & Ryan, 1991; Ryan, 1993).

Internalization and the Integrating Self

With its inherent needs and emerging interests, preferences potentials, and capacities, the self is poised to grow, develop, and differentiate. The need for relatedness, however, keeps the individual close to societal concerns and regulations and the self therefore develops both toward autonomy as well as toward a relatedness-motivated internalization of society's values and concerns. So behaviors, emotions, and ways of thinking originate not only within the self but also within the social context and society. As a person plays, studies, works, performs, and interacts with others, these other people request that the self comply with particular ways of behaving, feeling, and thinking. Thus, intentional acts (i.e., agency) sometimes arise from the self, but intentional acts also sometimes arise from the guidance and recommendations of others. The process through which individuals take in and accept as their own an externally prescribed way of thinking, feeling, or behaving is referred to as internalization (Ryan & Connell, 1989; Ryan et al., 1993). Internalization refers to the process through which an individual transforms a formerly externally prescribed way of behaving or valuing into an internal one (Ryan et al., 1993).

Internalization occurs for two essential reasons. First, internalization occurs from the individual's desire to achieve meaningful relationships with friends, parents, teachers, coaches, employers, clergy, family, and others. Thus, internalization is motivated by the need for relatedness. Second, internalization occurs from the individual's desire to interact effectively with the social world. Thus, internalization is motivated by the need for competence. Much of what the person internalizes promotes his effective functioning (e.g., go to school, brush your teeth, apologize to others). Such internalization has adaptive interpersonal value for the self, as it promotes greater unity between the self and society such as in the close relationships between parent and child; and it has adaptive intrapersonal value for the self, as it promotes greater effectance in environmental transactions (Ryan, 1993).

The contribution of agency to a portrayal of the self as action and development from within is to recognize that (1) human beings possess a core self, one energized by innate motivation and directed by the inherent developmental processes of differentiation and integration, and (2) not all self-structures are equally authentic; while some reflect the core self, others only reflect and reproduce the society (Deci et al., 1994; Deci & Ryan, 1985b, 1991; Ryan, 1991, 1993; Ryan & Connell, 1989).

Self-worth follows from being open to experience and from valuing the self for who one is. When people are open to experience, they are more honest and self-disclosing during interpersonal interactions, they take more responsibility for their behaviors and are less likely to hide and distort information to deceive others, they engage in fewer activities to escape self-awareness (e.g., television viewing, movies, compulsive behaviors involving food and work), they take fewer experience-altering substances, they show less defensiveness (e.g., less denial, less criticisms of others), and they prefer interaction partners that fulfill innate needs rather than partners that promote extrinsic goals such

as image and wealth (Hodgins & Knee, 2002; Hodgins, Koestner, & Duncan, 1996; Hodgins, Liebeskind, & Schwartz, 1996; Knee & Zuckerman, 1996, 1998). For example, in a love relationship, an individual developing in the direction of greater autonomy would prefer an intimate connection with a growth-oriented partner rather than a partner with socially desirable physical attributes, wealth, or social status.

People do not always behave in ways that express the core self. Sometimes environmental conditions do not facilitate integration but, instead, place external pressures on people to behave in ways consistent with social demands. Controlling (pressuring) environmental conditions lead the self to ignore innate needs and preferences and, instead, develop a self-structure around the goal of external validation (Hodgins & Knee, 2002). Hence, people who pursue external validation of a socially desirable self might choose a career for the financial wealth, prestige, or social power it offers rather than a career that is more consistent with their intrinsic interests, preferences, and innate needs. People organize their behavior and self-worth around the needs of the core self when the environment supports autonomy and personal agency; and people organize their behavior and self-worth around external validation when the environment supports neither their autonomy nor personal agency and instead promotes extrinsic aspirations.

Self-Concordance

The questions asked by the self-concordance model (Sheldon, 2002) are (1) How do people decide what to strive for in their lives? and (2) How does this personal striving process sometimes nurture the self and promote well-being yet other times go awry and diminish well-being? When people decide to pursue goals that are congruent or “concordant” with their core self, they pursue “self-concordant” goals.

The self-concordance model appears in Figure 10.3 (Sheldon & Elliot, 1999). The model begins when the person sets a goal for which to strive. For instance, one person might set the goal of getting married, another might set a goal of graduating high school, while yet another might set a goal of quitting smoking. Some goals reflect and emanate out from the core self’s needs, interests, and preferences (self-concordant goals), while other goals do not.

Figure 10.4 graphically illustrates this notion that a person’s goals may or may not represent the self’s inherent needs, interests, and internalized values (see Sheldon & Elliot, 1998). Following self-determination theory (discussed in Chapter 5), intrinsic

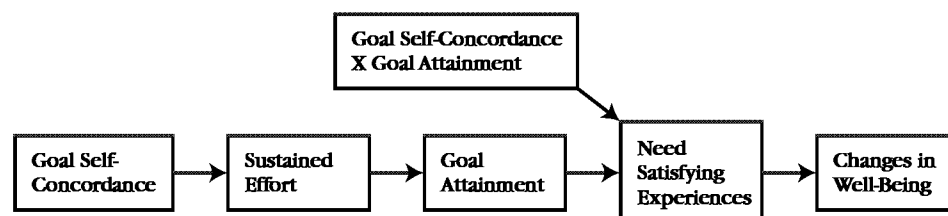


Figure 10.3 Self-Concordance Model

Source: From, Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model, by K. M. Sheldon & A. J. Elliot, 1999, *Journal of Personality and Social Psychology*, 76, 482–497. Copyright 1999 American Psychological Association. Reprinted by permission.

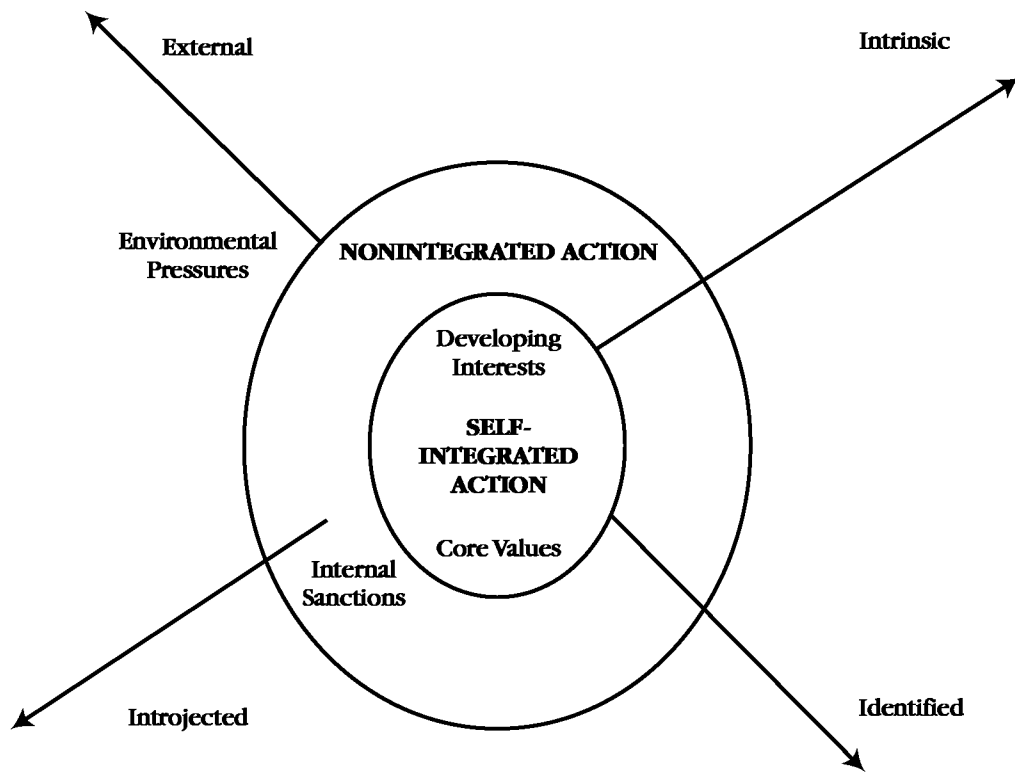


Figure 10.4 Diagrammatic Illustration of Self-Integrated and Nonintegrated Action

Source: From, Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model, by K. M. Sheldon & A. J. Elliot, 1999 *Journal of Personality and Social Psychology*, 76, 482–497. Copyright 1999 American Psychological Association. Reprinted by permission.

goals (goals set out of a strong interest) and identified goals (goals set out of a personal conviction, or value) represent self-concordant goals. Self-concordant goals reflect and express the integrated, agentic self. Introjected goals (goals set out of a sense of social obligation—it's what I should do or ought to do) and extrinsic goals (goals set out of a desire to be praised or rewarded) represent self-discordant goals. Self-discordant goals reflect and express nonintegrated action that emanates out of controlling internal and external pressures.

As shown in Figure 10.3, self-concordant goals generate and sustain greater effort (i.e., greater “agency”) than do self-discordant goals (Sheldon & Elliot, 1999). Greater effort, especially when sustained over time, increases the likelihood of subsequent goal attainment. Goal attainments foster need-satisfying experiences. That is, making progress in one's goals feels good, while failing to make progress feels bad (Carver & Scheier, 1990). But just how need-satisfying any one particular goal attainment is, however, depends on the extent to which the goal is a self-concordant one (see the line connecting Goal Self-Concordance → Goal Attainment → Need Satisfying Experience in Figure 10.3). Attaining self-concordant goals produces need-satisfying experiences to a greater degree than does attaining self-discordant goals. Finally, it is this experience of authentic need-satisfying experiences that increases well-being (i.e., gains in positive mood, vitality, physical health). That is, attaining self-concordant

goals provides the self with psychological nutriments that sustain well-being and agency motivation (Ryan, 1995).

A handy self-test exists to determine whether a personal goal is self-concordant or self-discordant—namely, are you striving for something you *want* to do, or for something you *have* to do? Self-concordant goals (intrinsic goals, identified goals) emanate out of a sense of authenticity and personal ownership—the person is fully aware that the striving is based on a personal interest, need, or value. Accordingly, the desire to pursue self-concordant goals is embedded in a context of positive affect and “wanting to.” Self-discordant goals (extrinsic goals, introjected goals) emanate out of a sense of pressure—that the personal striving is based on an obligation to others or to social pressures. Accordingly, the desire to pursue self-discordant goals is embedded in a context of anxiety, pressure, and “having to.” In Chapter 6, this distinction was referred to as “perceived locus of causality,” as self-concordant goals arise from an internal perceived locus of causality whereas self-discordant goals arise from an external perceived locus of causality. Thus, self-concordance refers to the sense of ownership that people have (or do not have) regarding their goals and strivings.

The act of acquiring a sense of ownership in one’s personal goals is a crucial developmental task of the self. A self characterized by agency is proactive and self-generates personal initiatives for life improvement and self-expansion, rather than just being reactive to the situational and cultural forces that come along. How self-concordance grows developmentally appears in Figure 10.5. The lefthand side of the figure essentially repeats the self-concordance model depicted earlier in Figure 10.3 (i.e., self-concordant goals → enhanced goal-seeking effort → enhanced goal attainment → need satisfying experiences → enhanced well-being). But the model in Figure 10.5 extends the self-concordant mode because need-satisfying experiences contribute to the development of the self by increasing future self-concordance (Sheldon & Houser-Marko, 2001). That is, psychological need satisfaction (feeling more autonomous, competent, and related) encourages greater self-assurance and greater knowledge of the integrated self. Feeling greater self-awareness and greater self-knowledge, people are increasingly likely to set and pursue self-concordant goals for themselves in the future. In doing so, they participate in an “upward spiral” in which gains in self-concordance contribute to subsequent gain in well-being, personal growth, and happiness (Sheldon & Houser-Marko, 2001).

Personal Strivings

Personal strivings are “what a person is typically or characteristically trying to do” (Emmons, 1989). These strivings represent what an individual is characteristically aiming to accomplish in his day-to-day behavior and over the course of his life (Emmons, 1989, 1996). Personal strivings are not goals per se but, instead, exist as superordinate aspects of the self that organize and integrate the many different goals a person seeks. To provide a concrete illustration of personal strivings, one person’s self-reported strivings appear in Table 10.2. This woman’s strivings are organized around concerns about profession (becoming a teacher, become better at my job), personality (being more independent, being more open-minded), relationships (finding a partner, not being so mean), emotion regulation (improving attitude, remaining calm), and well-being (being healthy, losing weight, having more money, traveling more).

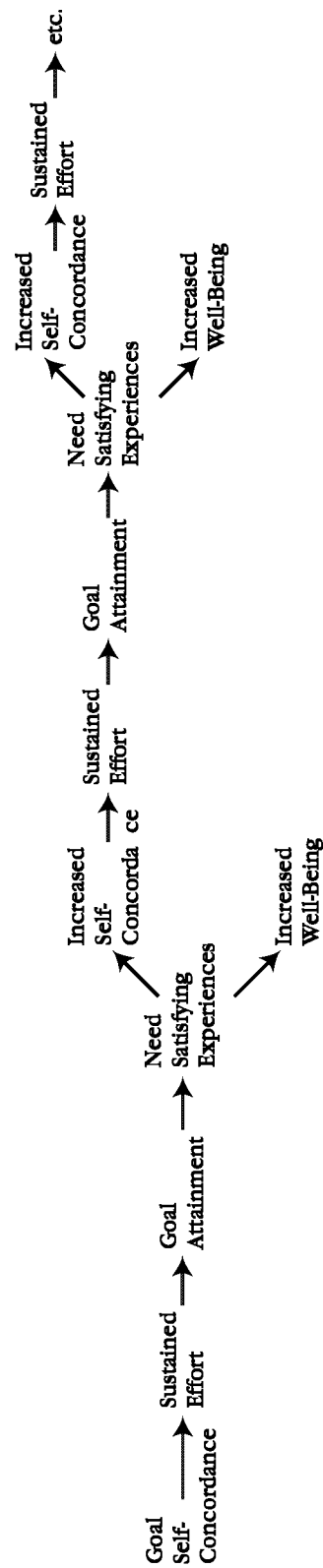


Figure 10.5 Cyclical Path Model for the Self-Concordance Model to Illustrate Developmental Gains in Both Well-Being and Self-Concordance

Note. The “Goal Self-Concordance \times Goal Attainment” Box and Its Path/Arrow to “Need Satisfying Experiences” shown in Figure 10.4 has been omitted from this figure for clarity and simplification.

Source: Adapted from Sheldon, K. M., & Houser-Marko, L. (2001). Self-concordance, goal attainment, and the pursuit of happiness: Can there be an upward spiral? *Journal of Personality and Social Psychology*, 80, 152-165. Copyright 2001 American Psychological Association. Adapted with permission.

Table 10.2 One Individual's Personal Strivings

-
1. Become a teacher
 2. Have a better attitude
 3. Become more independent
 4. Stay healthy
 5. Lose weight
 6. Have more money
 7. Remain calm
 8. Find a decent partner
 9. Become better at my job
 10. Become more open-minded
 11. Travel more often
 12. Not be so mean
-

Note: To produce these personal strivings, 12 blank lines were listed down the left-hand side of the page, which began with the following instructions:

A personal striving is an objective that you are typically trying to accomplish or attain. Personal strivings can be either positive or negative. In other words, a personal striving can be an objective that you typically approach and strive to attain, or it can be an objective that you typically strive to avoid. For instance, a striving you might approach and strive to attain might be "Be a fun person to be around." A striving you might strive to avoid might be "Quit smoking cigarettes."

Personal Growth and Subjective Well-Being

All personal strivings are not equal when it comes to their implications for the person's well-being. Instead of striving for what they are interested in and what they value, people often strive for extrinsic and non-self-concordant reasons such as those dictated by social pressure or by an expectation of what others think they should do (Sheldon & Kasser, 1998). Those personal strivings that are not endorsed by the self (e.g., "I *have* to quit smoking") tend to generate conflict and pressure in the person (Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001), whereas those personal strivings that cultivate self-concordant goals, personal growth, and subjective well-being (e.g., "I *want* to quit smoking") are those that seek greater autonomy, competence, or relatedness in the person's life (Sheldon, 2001).

Why this is so can be illustrated by an analogy to nutrition (Kasser & Ryan, 2001). Personal strivings that seek to bring greater autonomy, competence, and relatedness into one's life are those that seek to satisfy one's innate psychological needs (see Chapter 6). Striving for these sorts of goals acts like a diet of apples. Extrinsically oriented personal strivings (money, fame) are irrelevant to people's innate psychological needs and act like a diet of chocolate cake, one that is unable to promote personal growth or subjective well-being.

Furthermore, well-being neither follows from nor depends on actually attaining one's goals or personal strivings. That is, people who attain high levels of popularity, money, and awards are not more psychologically well than are those who do not attain these same sorts of goals. Rather, subjective well-being comes from the content of what one is trying to do (Emmons, 1996; Sheldon & Elliot, 1998). When people strive for autonomy, competence, and relatedness aspirations, they are able to create a meaning in their lives that fosters positive affect and subjective well-being. When people strive for chocolate cake (popularity, money, awards), people divorce their strivings from personal meaning in such a way that leads to negative affect, alienation, and subjective distress, and this is true even for those people who actually attain their strivings for popularity, money, and awards (Kasser & Ryan, 2001). Subjective well-being is more about what one is striving for than it is about what one actually attains.

SELF-REGULATION

As people attempt to accomplish the goals they have for themselves, they mentally step back to monitor and evaluate how well things are going. Self-regulation is the metacognitive monitoring and evaluating of one's ongoing effort to attain the goals one seeks (Zimmerman, 2002).

Self-Regulation: Forethought through Reflection

As illustrated in Figure 10.6, self-regulation is an ongoing, cyclical process (Zimmerman, 2000). It involves forethought, action, and reflection. Forethought involves goal setting and strategic planning. Following such preperformance forethought, the individual engages in the task and begins to perform and receive feedback. It is during this time that the person experiences goal–performance feedback discrepancies and becomes aware of various obstacles, difficulties, distractions, and interruptions. With this information in hand, the performer reflects on how it's going in terms of self-monitoring and self-evaluating. Self-monitoring is a self-observational process in which the person keeps track of the quality of his or her ongoing performance; self-evaluation is a judgment

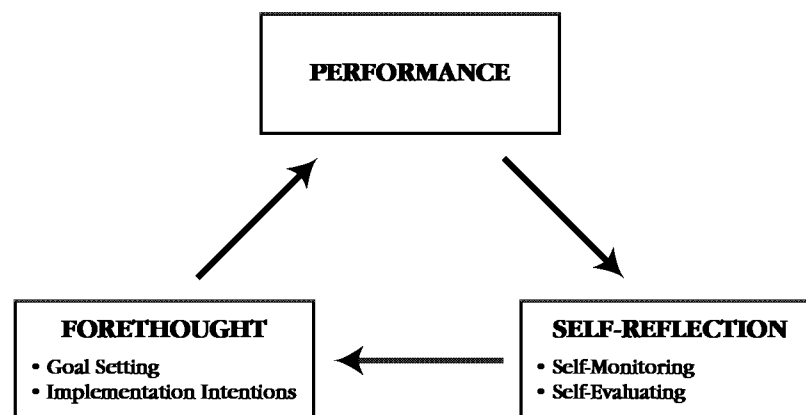


Figure 10.6 Cyclical Phases of Self-Regulation

process in which the person compares his or her current performance with the hoped-for goal state (Zimmerman, 2000). The self-reflection that is rooted in self-monitoring and self-evaluation leads to more informed forethought prior to the next performance opportunity. The ongoing, cyclical nature of self-regulation is apparent when self-reflection on one's performance leads to new and improved forethought.

Developing More Competent Self-Regulation

Everyone engages in self-regulation, but some people do it better than others (Winne, 1997). Self-regulatory processes need to be acquired, especially when the performer pursues a goal in an unfamiliar area (Schunk & Zimmerman, 1997). Gains in self-regulatory competence generally occur within a social learning process and at an observational level in which a relative novice in the domain observes the behavior and verbalizations from an expert model. The novice then begins to imitate the expert model, and in doing so, receives social guidance and feedback as to the effectiveness of his imitative behaviors. Following a history of social guidance and feedback, the novice begins to internalize the standards of excellence endorsed by the model. The person becomes self-regulating in the domain when he no longer needs the expert model and can self-regulate in terms of self-monitoring and self-evaluating.

As shown in Figure 10.7 self regulation involves the capacity to carry out the full goal-setting process on one's own (Schunk & Zimmerman, 1997). Developing self-regulatory skills involves three phases. First, the person is unable to regulate his or her behavior and unable to carry out the goal-setting process on his or her own. Gains in self-regulation at this level occur from observing an expert. Figure 10.8 illustrates this first phase as a young dancer observes her mentor. Second, observation leads to imitation, as the person participates in a social learning process by taking on the self-regulatory skills of an expert model. Observation leads to imitation, and imitation in turn leads to internalization and the roots of effective self-regulation. Third, the person is able to competently regulate his or her behavior and carry out the goal-setting and performance-monitoring process on his or her own. For instance, in learning how to become a competent and self-regulated writer, the novice observes and emulates the expert writer's style and standards, learns to set goals and formulate implementation

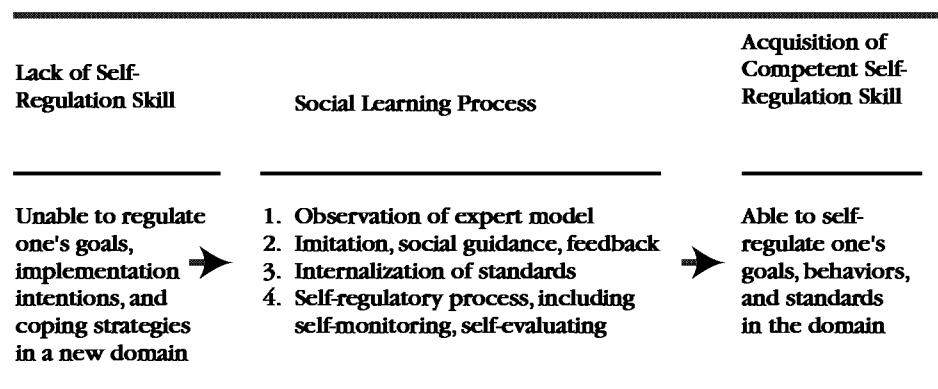


Figure 10.7 Summary of the Social Learning Process to Acquire Self-Regulation Skill



Figure 10 8 Acquiring Self-Regulation Skill by First Observing and Imitating an Expert Model

intentions, restructures the physical environment to facilitate writing, solicits feedback and tips about writing, and acquires the means to monitor and evaluate one's own work (Zimmerman & Risemberg, 1997).

The model depicted in Figure 10.8 shows that effective self-regulation progresses through the following four developmental phases: observation, imitation, self-control, and self-regulation. Figure 10.8 implies that effective self-regulation can be learned episodically and in a relatively short period of time. In practice, though, developing more competent self-regulation takes a long time (Pressley, 1995), and this is true for several reasons (e.g., old strategies are more readily accessible and come more easily to mind than do new strategies). Furthermore, in some sense, self-regulation is only the beginning of expertise. Building expertise is a very time-consuming process that requires not only the intensive mentoring described above but also countless hours of practice on

one's own (Ericsson & Charness, 1994; Ericsson, Krampe, & Tesch-Romer, 1993). Independent practice is very important, but the thesis in the self-regulation literature is that people can acquire, develop, and master complex skills more quickly and more expertly if they have the benefit of a tutor who models how to set goals, develop strategies, formulate implementation intentions, monitor performance, and evaluate (on one's own) the ongoing goal–performance–feedback process.

To summarize, consider a saying of the Chinese: “Start with your master, finish with yourself.” The study of self-regulation adds how that translational process from master to competent self-regulation occurs.

SUMMARY

Four basic problems occupy the self: defining and creating the self, relating the self to society, discovering and developing personal potential, and managing or regulating the self. This chapter presented these problems as self-concept (defining the self), identity (relating the self to society), agency (developing personal potential), and self-regulation (managing the self). The notions of self-concept, identity, agency, and self-regulation tell the story of how the self generates motivation by highlighting the self's cognitive structures, social relationships, strivings from within, and self-monitoring.

Self-schemas are cognitive generalizations about the self that are domain specific and are learned from past experience. The self-concept is a collection of domain-specific self-schemas (e.g., how people mentally represent their personal characteristics in domains such as athletic competence and interpersonal relationships). Self-schemas generate motivation in two ways: the consistent self and the possible self. For the consistent self, self-schemas direct behavior to confirm the self-view and to prevent episodes that generate feedback that might disconfirm that self-view. In other words, behavior is used to verify one's self-concept. Cognitive dissonance theory illustrates one way the consistent self maintains its self-view. The basic tenets of cognitive dissonance theory are that people dislike inconsistency, the experience of dissonance is psychologically aversive, and people seek to reduce dissonance by striving to maintain consistency in their beliefs, attitudes, values, and behaviors. For the possible self, the individual observes others and proactively forecasts a view of the future self that the person would like to become. Possible selves generate motivation for developing and growing toward sought-after aspirations.

Identity is the means by which the self relates to society, and it captures the essence of who the self is within a cultural context. Once people assume social roles (e.g., mother, bully), their identities direct their behaviors in ways that express the role-identity's cultural value. People with nice identities engage in nice behaviors, just as people with powerful identities engage in powerful behaviors. Thus, a physician is helpful and kind, rather than hostile or cruel, because these behaviors exemplify the good and powerful identity of doctor. When people act in identity-confirming ways, social interactions flow smoothly.

The self also possesses motivation of its own, or agency. Agency entails action. Action emerges spontaneously from intrinsic motivation, and its development proceeds through the processes of differentiation and integration. Intrinsic motivation, which is inherent within psychological needs, energizes the self to exercise and develop its inherent capabilities. Differentiation occurs as the self exercises its intrinsic interests, preferences, and capacities to grow and expand the self into an ever-increasing complexity. Integration occurs as these differentiated parts of the self are brought together into a sense of coherence or unity. The process is a dynamic one in which intrinsic motivation, differentiation, integration, and the internalization of social experience all contribute to the ongoing development and growth of the self. The self-concordance model illustrates the motivational and developmental benefits of pursuing life goals that emanate out of the integrated

or core self. Self-congruence between one's self and one's goals generates enhanced effort that leads to a greater likelihood of need-satisfying experiences that, in turn, promote both well-being and future gains in self-concordance.

Personal strivings constitute the superordinate goals people try to accomplish. Personal strivings are important not only because they organize and foreshadow a person's underlying goal system, but also because they foreshadow a person's emotional well-being. Well-being is more about what one strives for than it is about what one actually obtains in life.

Self-regulation involves the person's metacognitive monitoring of how his or her goal-setting progress is going. As people attempt to get started and to maintain their goal-directed strivings, they mentally step back to monitor and evaluate the process. Self-monitoring is a self-observational and a self-judgment process in which the person compares present performance with the goal state. Self-regulatory processes are often acquired through a social learning process in which a novice observes, imitates, and then internalizes the competent self-regulatory skills of an expert model. Acquiring a greater capacity for more effective self-regulation increases the self's capacity to carry out the goal-setting process on one's own.

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Identity

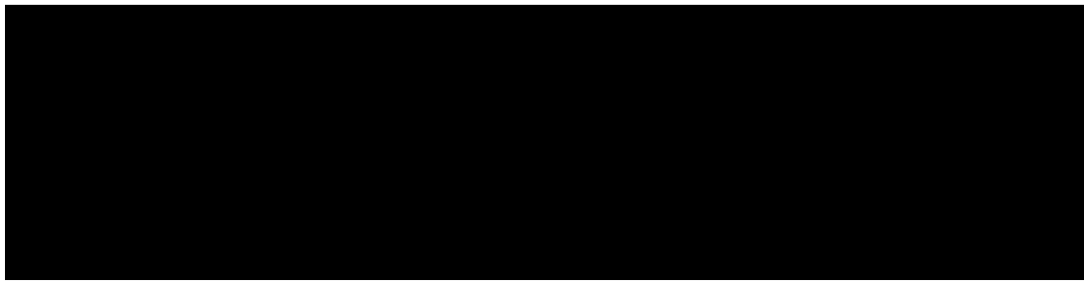
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Chapter 11

Nature of Emotion: Five Perennial Questions

FIVE QUESTIONS

WHAT IS AN EMOTION?

- Definition of Emotion

- Relationship between Emotion and Motivation

 - Emotion as Motivation

 - Emotion as Readout

WHAT CAUSES AN EMOTION?

- Biology and Cognition

 - Biological Perspective

 - Cognitive Perspective

- Two-Systems View

- Chicken-and-Egg Problem

- Comprehensive Biology–Cognition Model

HOW MANY EMOTIONS ARE THERE?

- Biological Perspective

- Cognitive Perspective

- Reconciliation of the Numbers Issue

- Basic Emotions

 - Fear

 - Anger

 - Disgust

 - Sadness

 - Negative Basic Emotions: Threat and Harm

 - Joy

 - Interest

 - Positive Basic Emotions: Motive Involvement and Satisfaction

WHAT GOOD ARE THE EMOTIONS?

- Coping Functions

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Social Functions

Why We Have Emotions

WHAT IS THE DIFFERENCE BETWEEN EMOTION AND MOOD?

Everyday Mood

Positive Affect

Conditions That Make Us Feel Good

Benefits of Feeling Good

SUMMARY

READINGS FOR FURTHER STUDY

According to Chinese fortune cookies, the great philosophers, the Bible, Roosevelt (FDR) speeches, Vulcans, and the Dalai Lama, emotions such as anger and fear rarely pay off. Most of the time, these sources say emotions lead to destructive results. Emotion researchers, in contrast, generally see all emotions as constructive responses to fundamental life tasks. Anger and fear might feel bad and they might sometimes lead to problematic ways of behaving, but even the hottest of emotions exists as a necessary tradeoff in humans' emotion-laden quest for survival.

Emotion researchers are an open-minded bunch, so they decided to pack their bags, board an airplane to Dharamsala, and visit the Dalai Lama to hear a second opinion about "destructive emotions" (see Goleman, 2003). After all, it does make a good deal of sense to think of some emotions as potentially dangerous. You do not want to be in the same car with an anger-prone driver who fumes, speeds, weaves in and out, and grips the steering wheel like he is strangling the life out of other drivers' throats. This driver could benefit from a chat with the Dalai Lama.

So what wisdom did the Dalai Lama have to offer? A lot, it turns out. Buddhist thought organizes itself around the goal of recognizing and then lessening destructive emotions, particularly the big three of craving, agitation, and hatred. These emotions apparently are those that are most harmful to self and others. They have their place in survival and adapting to threatening situations, but since saber tooth tigers are no longer in the neighborhood, anger, fear, and the like may cost us at least as much as they provide.

Through years of meditation, Buddhists learn how to translate their craving into contentment, their agitation into calm, and even their hatred into compassion. In the West, people lessen their negative emotions mostly with medicines (e.g., a pill for anxiety, a drug for depression). In the East, those who practice meditation turn their negative emotions into positive ones, as anger can, potentially, be focused into compassion and resentment can be willed into love and respect for the other. Our biology has indeed prepared us to act emotionally to important life events, as everyone feels sad with loss and fear with threat. But a lot happens in the split second that occurs between the onset of a threat and the initiation of a constructive or destructive emotional response. Discovering what happens in this split second of time opens up the possibility of being able to translate a biologically destructive reaction into a more constructive way of coping.

FIVE QUESTIONS

Emotions typically arise as reactions to important life events. Once activated, emotions generate feelings, arouse the body to action, generate motivational states, and produce recognizable facial expressions. To understand emotions and how they generated motivated action, Chapter 11 discusses the nature of emotion while Chapter 12 focuses on understanding the emotional events and processes that occur within that split second between life event and emotional response. Here, Chapter 11 discusses and answers the following five perennial questions in the study of emotion :

1. What is an emotion?
2. What causes an emotion?
3. How many emotions are there?
4. What good are the emotions?
5. What is the difference between emotion and mood?

WHAT IS AN EMOTION?

Emotions are more complex than first meets the eye. At first glance, we all know emotions as feelings. We know joy and fear because the feeling aspect of these emotions is so salient in our experience. It is almost impossible not to notice emotion's feeling aspect when we encounter a threat (fear) or make progress toward a goal (joy). But, in the same way that the nose is only part of the face, feelings are only part of the emotion.

Emotions are multidimensional. They exist as subjective, biological, purposive, and social phenomena (Izard, 1993). In part, emotions are subjective feelings, as they make us feel a particular way, such as angry or joyful. But emotions are also biological reactions, energy-mobilizing responses that prepare the body for adapting to whatever situation one faces. Emotions are also agents of purpose, much like hunger has purpose. Anger, for instance, creates a motivational desire to do what we might not otherwise do, such as fight an enemy or protest an injustice. And, emotions are social phenomena. When emotional, we send recognizable facial, postural, and vocal signals that communicate the quality and intensity of our emotionality to others.

Given the four-part character of emotion, it is apparent that the concept is going to elude a straightforward definition. The difficulty in defining emotion might puzzle you at first because emotions seem so straightforward in everyday experiences. Everyone knows what it is like to experience joy and anger, so the reader might ask, "What's the problem with actually defining emotion?" The problem is the following: "Everyone knows what emotion is, until asked to give a definition" (Fehr & Russell, 1984). None of these separate dimensions—subjective, biological, purposive, or social—adequately defines emotion. One cannot equate a feeling with an emotion any more than one can equate a posed facial expression with an emotion (Russell, 1995). There is simply more to emotion than just a feeling or just an expression. Each of these four dimensions simply emphasizes a different aspect of emotion. To understand and to define emotion, it is necessary to study each of emotion's four dimensions and how they interact with one another.

Emotion's four dimensions (or components) appear in Figure 11.1. The figure shows four boxes, and each box corresponds to a separate aspect of emotion. The feeling

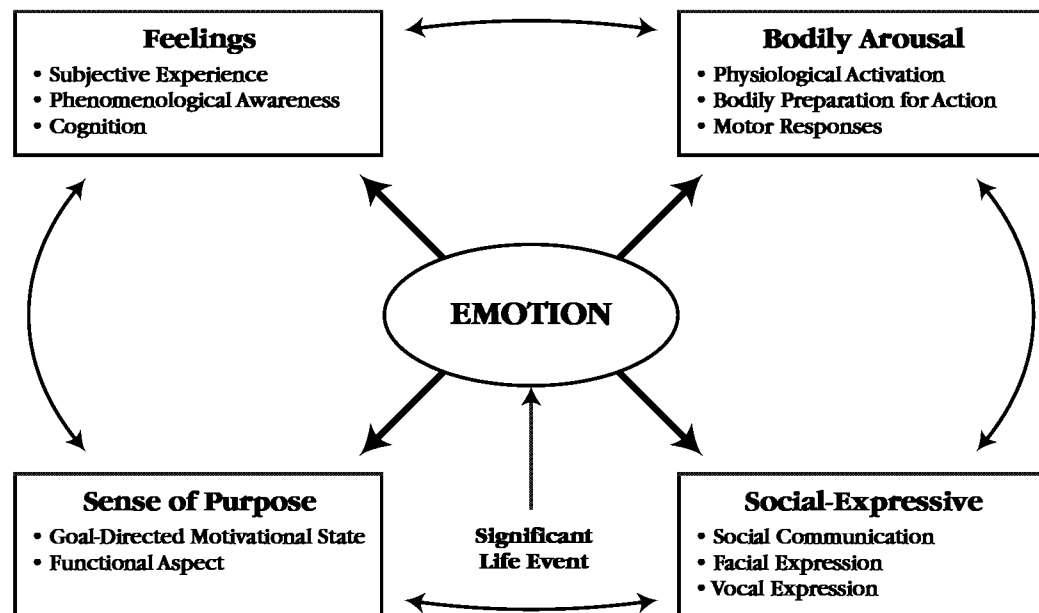


Figure 11.1 Four Components of Emotion

component gives emotion its subjective experience that has both meaning and personal significance. In both intensity and quality, emotion is felt and experienced at the subjective (or “phenomenological”) level. The feeling aspect is rooted in cognitive or mental processes.

The bodily arousal component includes our neural and physiological (biological) activation, including the activity of the autonomic and hormonal systems as they prepare and regulate the body’s adaptive coping behavior during emotion. Brain activation, bodily arousal, and physiological activity are so intertwined with emotion that any attempt to imagine an angry or disgusted person who is not bodily aroused is nearly impossible. When emotional, our body is prepared for action, and that is true in terms of our brain, physiology (heart rate, epinephrine in the bloodstream) and musculature (alert posture, clenched fist).

The purposive component gives emotion its goal-directed character to take the action necessary to cope with the circumstances at hand. The purposive aspect explains why people want to do what they do and why people benefit from their emotions. The person without emotions would be at a substantial social and evolutionary disadvantage to the rest of us. Imagine, for instance, the physical and social survival handicap of the person without the capacity for fear, embarrassment, interest, or love.

The social-expressive component is emotion’s communicative aspect. Through postures, gestures, vocalizations, and facial expressions, our private experiences become public expressions. During the expression of emotion, we nonverbally communicate to others how we feel and how we interpret the present situation. For instance, as a person opens a private letter, we watch their face and listen to the tone of their voice to read their emotions. Emotions therefore engage our whole person—our feelings, bodily arousal, sense of purpose, and nonverbal communications.

Definition of Emotion

Given this introduction to the four components of emotion, we can offer an introductory definition. Emotions are short-lived, feeling–arousal–purposive–expressive phenomena that help us adapt to the opportunities and challenges we face during important life events. Because emotions arise in response to the significant events in our lives, Figure 11.1 includes a path from “significant life event” to “emotion.”

Defining emotion is more complicated than a “sum of its parts” definition. Emotion is the psychological construct that unites and coordinates these four aspects of experience into a synchronized pattern. That is why the term “emotion” appears in Figure 11.1 as a separate construct from its individual components. Emotion is that which choreographs the feeling, arousal, purposive, and expressive components into a coherent reaction to an eliciting event. For instance, in the case of fear, the eliciting event might be steep ski slopes, while the reaction includes feelings, bodily arousal, goal-directed desires, and all-too-public nonverbal communications. Thus, the threatened skier feels scared (feeling aspect), is “pumped up” (bodily arousal aspect), strongly desires self-protection (purposive aspect), and shows tensed eyes and pulled-back corners of the mouth (expressive aspect). These synchronized, mutually supportive elements form a pattern of reactivity to an environmental danger that is the emotion of fear.

This definition of emotion highlights how different aspects of experience complement and coordinate with one another (Averill, 1990; LeDoux, 1989). For instance, what people feel correlates with how they move the muscles of their face. As you view and smell rotten food, for instance, the way you feel and the way you wrinkle your nose and scrunch your upper lip are coordinated as a coherent feeling-expressive system (Rosenberg & Ekman, 1994). Similarly, the way you move your face is coordinated with your physiological reactivity, such that lowering your brow and pressing your lips firmly together coincides with increased heart rate and a raised skin temperature (Davidson, Ekman, Saron, Senulis, & Friesen, 1990).

These interrelationships and the intercoordination among the four different components of emotion are shown graphically in Figure 11.1 by the thin, curved lines that connect each aspect of emotion to each of the other three aspects. The two-way arrows communicate that, for instance, changes in feelings influence and co-occur with bodily arousal just as changes in bodily arousal influence and co-occur with feelings.

Figure 11.2 provides a concrete illustration of the otherwise abstract principle shown in Figure 11.1. Using sadness as an example, separation or failure is a common eliciting life event. With the onset of sadness, the aversive feeling arises and influences and co-occurs with lethargic bodily arousal, with a sense of purpose (overcome or reverse the separation or failure), and the distinctive sad facial expression. Hence, emotions are the synchronized systems that coordinate feeling, arousal, purpose, and expression so to ready the individual to adapt successfully to life circumstances. “Emotion” is the word psychologists use to name this coordinated, synchronized process.

Relationship between Emotion and Motivation

Emotions relate to motivation in two ways. First, emotions are one type of motive. Like all other motives (e.g., needs, cognitions), emotions energize and direct behavior. Anger,

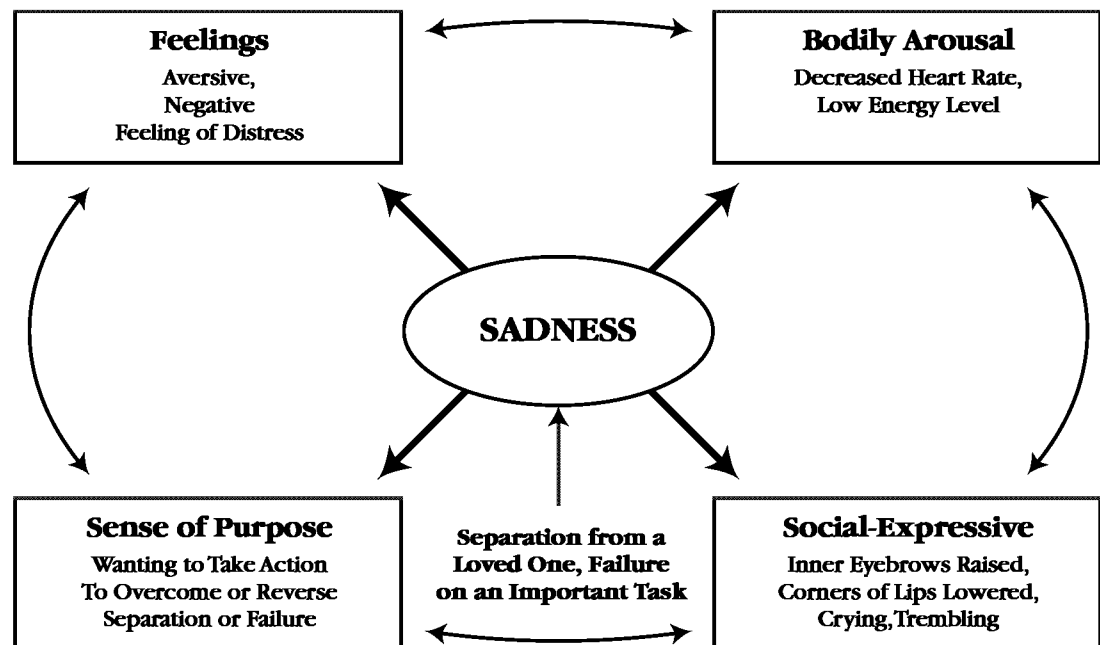


Figure 11.2 Four Components of Sadness

for instance, energizes subjective, physiological, hormonal, and muscular resources (i.e., energizes behavior to achieve a particular goal or purpose (i.e., directs behavior), such as overcoming an obstacle or righting an injustice. Second, emotions serve as an ongoing “readout” system to indicate how well or how poorly personal adaptation is going. Joy, for instance, signals social inclusion and progress toward goals, whereas distress signals social exclusion and failure.

Emotion as Motivation

Most emotion researchers agree that emotions function as one type of motive. Some researcher, however, go further. They argue that emotions constitute the *primary* motivational system (Izard, 1991; Tomkins, 1962, 1963, 1984). Throughout the 100-year history of psychology, the physiological drives (hunger, thirst, sleep, sex, and pain) were considered to be the primary motivators (Hull, 1943, 1952). Air deprivation provides one example. Being deprived of air generates a physiological drive that can capture the person’s full attention, energize the most vigorous of action, and direct behavior decidedly toward a single purpose. Accordingly, it seems logical to conclude that air deprivation produces a potent and primary homeostatic motive for taking whatever action is necessary in gaining the air needed to reestablish homeostasis (see Chapter 4). Emotion researcher Silvan Tomkins, however, called this reasoning, this apparent truism, a “radical error.” According to Tomkins (1970), the loss of air produces a strong emotional reaction—one of fear or terror. It is this terror that provides the motivation to act. Thus, the terror, not the air deprivation or the bodily threat to homeostasis, is the causal and immediate source of the motivated action that follows. Take away the emotion, and you take away the motivation.

Emotion as Readout

Emotions read out the person's ever-changing motivational states and personal adaptation status (Buck, 1988). Positive emotions signal that "all is well," reflect the involvement and satisfaction of our motivational states, and evidence our successful adaptation to what is going on around us; negative emotions act as a warning signal that "all is not well," reflect the neglect and frustration of our motivational states, and evidence our unsuccessful adaptation to what is going on around us (Frijda, 1986; Oatley & Jenkins, 1992).

From this point of view, emotions are not necessarily motives in the same way that needs and cognitions are, but, instead, reflect the satisfied versus frustrated status of other motives. Consider sexual motivation and how emotion provides an ongoing progress report ("readout") that facilitates some behaviors and inhibits others. During attempts at sexual gratification, positive emotions such as interest and joy signal that all is well and facilitate further sexual conduct. Negative emotion such as disgust, anger, and guilt signal that all is not well and inhibit further sexual conduct. Positive emotions (interest, joy) during motivated action provide a metaphorical green light for continuing to pursue that course of action; negative emotions (disgust, guilt) during motivated action, on the other hand, provide a metaphorical red light for stopping the pursuit of that course of action.

WHAT CAUSES AN EMOTION?

When we encounter a significant life event, an emotion comes to life, as shown in Figure 11.3. As shown below, people's mind (cognitive processes) and body (biological processes) react in adaptive ways. That is, encountering a significant life event activates cognitive and biological processes that collectively activate the critical components of emotion, including feelings, bodily arousal, goal-directed purpose, and expression.

One central question in the study of emotion is, What causes an emotion? Many viewpoints come into play in this causal analysis, including those that are biological, psychoevolutionary, cognitive, developmental, psychoanalytical, social, sociological, cultural, and anthropological. Despite this diversity, understanding what causes an emotion rallies around one central debate: biology versus cognition. In essence, this debate asks whether emotions are primarily biological or primarily cognitive phenomena. If emotions are largely biological, they should emanate from a causal biological core, such as neuroanatomical brain circuits. If emotions are largely cognitive, however, they

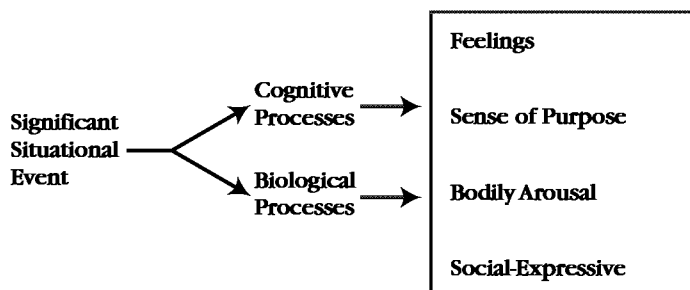


Figure 11.3 Causes of the Emotion Experience

should emanate from causal mental events, such as subjective appraisals of what the situation means.

Biology and Cognition

Together, the cognitive and biological perspectives provide a relatively comprehensive picture of the emotion process. Nonetheless, acknowledging that both cognitive and biological aspects underlie emotion begs the question as to which is primary: biological or cognitive factors (Lazarus, 1982, 1984, 1991a, 1991b; Scherer & Ekman, 1984; Zajonc, 1980, 1981, 1984). Those who argue for the primacy of cognition contend that individuals cannot respond emotionally unless they first cognitively appraise the meaning and personal significance of an event: Is the event relevant to well-being? Is it relevant to a loved one's well-being? Is it important? beneficial? harmful? First, meaning is established, and then emotion follows accordingly. Appraisal of meaning causes emotion. Those who argue for the primacy of biology contend that emotional reactions do not necessarily require such cognitive evaluations. Events of a different sort, such as subcortical neural activity or spontaneous facial expressions, activate emotion. For the biological theorist, emotions can and do occur without a prior cognitive event, but they cannot occur without a prior biological event. Biology, not cognition, is therefore primary.

Biological Perspective

Three representatives for the biological perspective include Carroll Izard (1989, 1991), Paul Ekman (1992), and Jaak Panksepp (1982, 1994). Izard (1984) finds that infants respond emotionally to certain events despite their cognitive shortcomings (e.g., limited vocabulary, limited memory capacity). A 3-week-old infant, for instance, smiles in response to a high-pitched human voice (Wolff, 1969), and a 2-month-old expresses anger in response to pain (Izard, Hembree, Dougherty, & Spizzirri, 1983). By the time the child acquires language and begins to use sophisticated long-term memory capacities, most emotional events then involve a great deal of cognitive processing. Nonetheless, despite the richness of cognitive activity in the emotion process, Izard (1989) insists that much of the emotional processing of life events remains noncognitive—automatic, unconscious, and mediated by subcortical structures. Infants, because they are biologically sophisticated yet cognitively limited, best demonstrate the primacy of biology in emotion.

Ekman (1992) points out that emotions have very rapid onsets, brief durations, and can occur automatically/involuntarily. Thus, emotions happen to us, as we act emotionally even before we are consciously aware of that emotionality. Emotions are biological because they evolved through their adaptive value in dealing with fundamental life tasks. Ekman, like Izard, recognizes the cognitive, social, and cultural contributions to emotional experience, but he concludes that biology—rather than learning, social interaction, or socialization history—lies at the causal core of emotion.

For Panksepp (1982, 1994), emotions arise from genetically endowed neural circuits that regulate brain activity (e.g., biochemical and neurohormonal events). Panksepp acknowledges that it is more difficult to study the hidden recesses of brain circuits than it is to study verbally labeled feelings. He insists, however, that brain circuits provide the essential biological underpinning for emotional experience. For instance, we (and other animals) inherit a brain-anger circuit, a brain-fear circuit, a brain-sadness circuit, and a

few others. The rationale in supporting Panksepp's biological perspective comes from three important findings:

1. Because emotional states are often difficult to verbalize, they must therefore have origins that are noncognitive (not language based).
2. Emotional experience can be induced by noncognitive procedures, such as electrical stimulation of the brain or activity of the facial musculature.
3. Emotions occur in infants and nonhuman animals

Cognitive Perspective

Three representatives of the cognitive perspective include Richard Lazarus (1984, 1991a, 1991b), Klaus Scherer (1994a, 1994b, 1997), and Bernard Weiner (1986). For each of these theorists, cognitive activity is a necessary prerequisite to emotion. Take away the cognitive processing, and the emotion disappears.

Lazarus argues that without an understanding of the personal relevance of an event's potential impact on personal well-being, there is no reason to respond emotionally. Stimuli appraised as irrelevant do not elicit emotional reactions. For Lazarus (1991a, 1991b), the individual's cognitive appraisal of the meaning of an event (rather than the event itself) sets the stage for emotional experience. That is, a car passing you in traffic is not likely to call up your fear unless its way of passing leads you to think that your well-being has in some way been put at risk. The emotion-generating process begins not with the event and not with one's biological reaction to it, but instead with the cognitive appraisal of its meaning.

Scherer (1994a, 1997) agrees with Lazarus that some life experiences produce emotions, whereas other life experiences do not. Scherer identifies several specific cognitive appraisals that generate emotional experiences, including: Is the event good or bad? Can I cope successfully with this situation? and Is this event okay on a moral level? Answers to these questions of how we appraise the situation constitutes the sort of cognitive processing that gives rise to emotions.

In his attribution analysis of emotion, Weiner (1986) concentrates on the information processing that takes place after life outcomes occur. That is, attribution theory focuses on the thinking and personal reflection we engage in following life's successes and failures. Following a success, believing that it was caused by the self produces one emotion (pride) while believing that same success was caused by a friend produces a different emotion (gratitude). Notice that both the outcome and the life event might be the same, but if the attribution is different, then so is the emotional experience. Thus, the attribution, not the event or the outcome, gives life to the emotion.

So, which side is correct? Or, which side is more correct? Emotion researchers have struggled for answers to this question, and two helpful answers have emerged.

Two-Systems View

One answer to the "What causes emotion?" question is that both cognition and biology cause emotion. According to Buck (1984), human beings have two synchronous systems that activate and regulate emotion.

One system is an innate, spontaneous, physiological system that reacts involuntarily to emotional stimuli. A second system is an experience-based cognitive system that reacts interpretatively and socially. The physiological emotion system came first in humankind's evolution (i.e., the limbic system), whereas the cognitive emotion system came later as human beings became increasingly cerebral and increasingly social (i.e., the neocortex). Together, the primitive biological system and the contemporary cognitive system combine to provide a highly adaptive, two-system emotion mechanism.

The two-systems view appears in Figure 11.4 (Buck, 1984). The lower system is biological and traces its origins to the ancient evolutionary history of the species. Sensory information is processed rapidly, automatically, and unconsciously by subcortical (i.e., limbic) structures and pathways. The second system is cognitive and depends on the unique social and cultural learning history of the individual. Sensory information is processed evaluatively, interpretatively, and consciously by cortical pathways. The two emotion systems are complementary (rather than competitive) and work together to activate and regulate emotional experience.

Robert Levenson (1994a) takes the two-systems view of emotion a bit farther by hypothesizing how the biological and cognitive emotion systems interact. Instead of existing as parallel systems, the two systems influence one another. Panksepp (1994) adds that some emotions arise primarily from the biological system, whereas other emotions arise primarily from the cognitive system. Emotions such as fear and anger arise primarily from subcortical neural command circuits (from subcortical structures and pathways in Buck's [1984] terminology). Other emotions such as gratitude and hope, however, cannot be well explained by subcortical neural circuits. Instead, they arise chiefly from personal experience, social modeling, and cultural contexts. This category of emotions arises primarily from appraisals, expectancies, and attributions (from cortical structures and pathways in Buck's terminology).

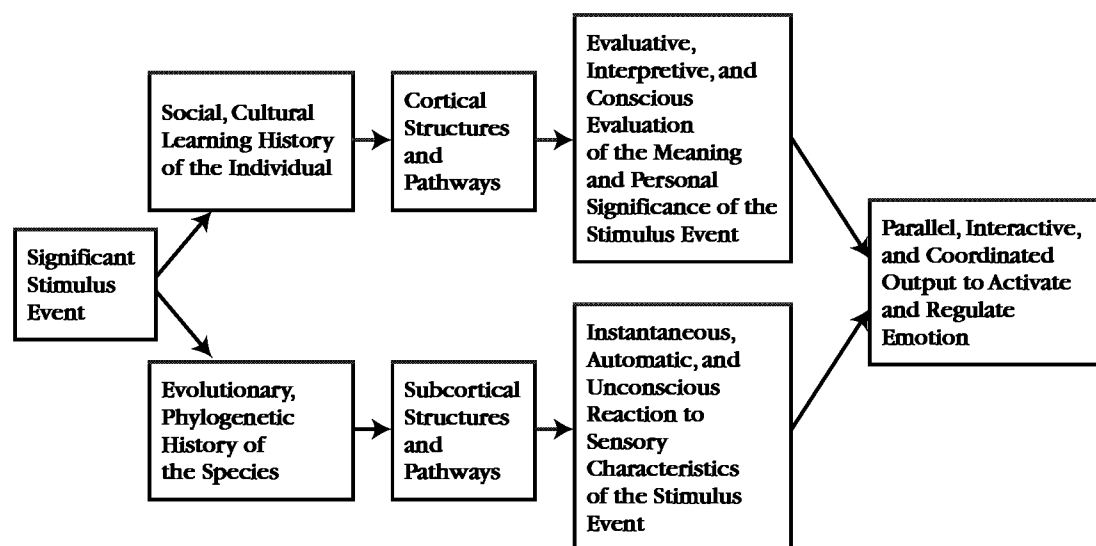


Figure 11.4 Two-Systems View of Emotion

Chicken-and-Egg Problem

Robert Plutchik (1985) sees the cognition versus biology debate as a chicken-and-egg quandary. Emotion should not be conceptualized as cognitively caused or as biologically caused. Rather, emotion is a process, a chain of events that aggregate into a complex feedback system. The elements in Plutchik's feedback loop are cognition, arousal, feelings, preparations for action, expressive displays, and overt behavioral activity (i.e., recall the multidimensional aspects of emotion from Figures 11.1 and 11.2). One possible representation of Plutchik's emotion feedback loop appears in Figure 11.5. The feedback system begins with a significant life event and concludes with emotion. Mediating between event and emotion is a complex interactive chain of events. To influence emotion, one can intervene at any point in the feedback loop. Change the cognitive appraisal from "this is beneficial" to "this is harmful," and the emotion will change. Change the quality of the arousal (as through exercise, a drug, or an electrode in the brain), and the emotion will change. Change bodily expression (e.g., facial musculature, bodily posture), and the emotion will change, and so on.

Plutchik's (1985) solution to the cognition–biology debate enters into the complex world of dialectics, in which each aspect of emotion is both cause and effect and the final outcome is due to the dynamic interplay among the six forces in the figure. The most important theme to extract from a chicken-and-egg analysis is that cognitions do not directly cause emotions any more than biological events do. Together, cognition, arousal, preparation for action, feelings, expressive displays, and overt behavioral activity constitute the cauldron of experience that causes, influences, and regulates emotion. Others echo this emotion-as-a-process view by emphasizing that all emotional experiences exist as episodes that occur over time, as the different components continually rise and fall and exert influences on one another (Scherer, 1994b).

Comprehensive Biology–Cognition Model

Emotions are complex (and interactive) phenomena. As with most complexities, it makes sense to work on one piece of the puzzle at a time. Generally speaking, biologists,

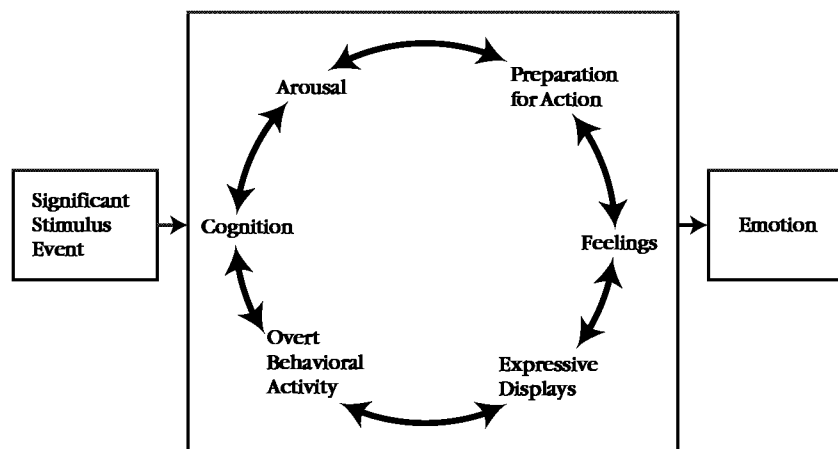


Figure 11.5 Feedback Loop in Emotion

ethologists, and neurophysiologists focus mostly on the biological aspects of emotion, whereas cognitive psychologists, social psychologists, and sociologists focus mostly on its cognitive, sociocultural aspects. This is precisely the organizational scheme adopted in Chapter 12. It discusses first the biological aspects of emotion and then the cognitive aspects. The chapter also adds an additional section on the social and cultural contributions to emotional experience.

HOW MANY EMOTIONS ARE THERE?

The cognition–biology debate indirectly raises another important question: How many emotions are there? A biological orientation emphasizes primary emotions (e.g., anger, fear) and downplays the importance of secondary or acquired emotions. A cognitive orientation acknowledges the importance of the primary emotions, but it stresses that much of what is interesting about emotional experiences arises from individual, social, and cultural experiences. A cognitive orientation emphasizes the complex (secondary, acquired) emotions. Ultimately, any answer to the “How many emotions are there?” question depends on whether one favors a biological or a cognitive orientation.

Biological Perspective

The biological perspective typically emphasizes primary emotions, with a lower limit of two (Solomon, 1980) or three (Gray, 1994) to an upper limit of 10 (Izard, 1991). Each biological theorist has a very good reason for proposing a specific number of emotions, although each proposal is based on a different emphasis. Eight major research traditions in the biological study of the emotions appear in Figure 11.6. The figure identifies the number of emotions suggested by the empirical findings within that tradition, it explains the rationale on which the theorist proposes that number of emotions, and it offers a supportive reference citation for further reading.

Richard Solomon (1980) identifies two hedonic, unconscious brain systems that exist such that any pleasurable experience is automatically and reflexively opposed by a counter-aversion experience, just as any aversive experience is automatically and reflexively opposed by a counter-pleasurable process (e.g., fear is countered by, and quickly replaced by, the “opponent process” of euphoria, as during sky diving). Jeffrey Gray (1994) proposes three basic emotions rooted in separate brain circuits: the behavioral approach system (joy), the fight-or-flight system (anger/fear), and the behavioral inhibition system (anxiety). Jaak Panksepp (1982) proposes four emotions—fear, rage, panic, and expectancy—based on his finding of four separate neuroanatomical, emotion-generating pathways within the limbic system. Nancy Stein and Tom Trabasso (1992) stress the four emotions of happiness, sadness, anger, and fear because these emotions reflect reactions to life’s essential pursuits: attainment (happiness), loss (sadness), obstruction (anger), and uncertainty (fear). Silvan Tomkins (1970) distinguishes six emotions—interest, fear, surprise, anger, distress, and joy—because he finds six distinct patterns of neural firing produce these different emotions (e.g., rapid increase in rate of neural firing instigates surprise). Paul Ekman (1992, 1994a) proposes six distinct emotions—fear, anger, sadness, disgust, enjoyment, and contempt—because he finds

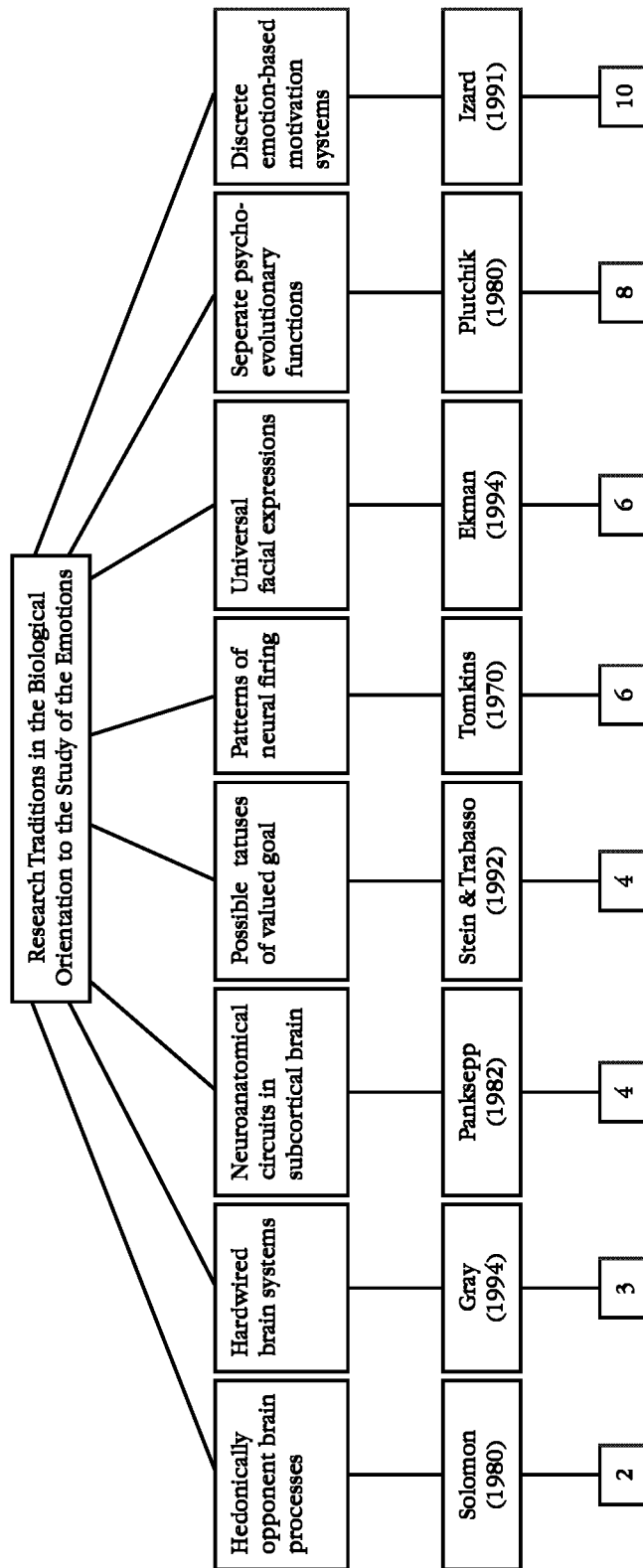


Figure 11.6 Eight Research Traditions in the Biological Study of Emotion

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that each of these emotions is associated with a corresponding universal (cross-cultural) facial expression. Robert Plutchik (1980) lists eight emotions—anger, disgust, sadness, surprise, fear, acceptance, joy, and anticipation—because each one corresponds to an emotion–behavior syndrome common to all living organisms (e.g., fear corresponds to protection). Finally, Carroll Izard (1991) lists 10 emotions on the basis of his differential emotions theory: anger, fear, distress, joy, disgust, surprise, shame, guilt, interest, and contempt.

Each of these eight research traditions agree that (1) a small number of basic emotions exists, (2) basic emotions are universal to all human beings (and animals), and (3) basic emotions are products of biology and evolution. Where the eight traditions diverge is in their specifications of what constitutes the precise biological core that orchestrates emotional experience.

Cognitive Perspective

The cognitive perspective asserts firmly that human beings experience a greater number of emotions than the 2–10 highlighted by the biological tradition. Cognitive theorists grant that, yes of course, there are only a limited number of neural circuits, facial expressions, and bodily reactions (e.g., the fight-or-flight reaction). They point out, however, that several different emotions can arise from the same biological reaction. For instance, a single physiological response, such as a rapid rise in blood pressure, can serve as the biological basis for anger, jealousy, or envy. High blood pressure and an appraisal of injustice produce anger; high blood pressure and an appraisal that an object should be the self's rather than another's produce jealousy; and high blood pressure and an appraisal that another is in a more favorable position than is the self produce envy. For cognitive theorists, human beings experience a rich diversity of emotion because situations can be interpreted so differently (Shaver, Schwartz, Kirson, & O'Connor, 1987) and because emotion arises from a blend of cognitive appraisal (Lazarus, 1991a), language (Storm & Storm, 1987), personal knowledge (Linville, 1982), socialization history (Kemper, 1987), and cultural expectations (Leavitt & Power, 1989).

Nine research traditions within the cognitive study of the emotions appear in Figure 11.7. The figure explains the rationale on which each theorist proposes that emotions arise, and it offers a supportive reference citation for further reading. The figure shows that all cognitive theorists answer the “How many emotions are there” question with the same answer, namely that an almost limitless number of emotions exist. This is so because all cognitive theorists share the assumption that “emotions arise in response to the meaning structures of given situations; different emotions arise in response to different meaning structures” (Frijda, 1988). How the cognitive theories of emotion differ is in how they portray the way people generate and interpret the meaning of a situation. The situation can provide the context to interpret one's aroused state (Schachter, 1964), the individual can interpret his own aroused state (Mandler, 1984), and people can be socialized to interpret their aroused state (Kemper, 1987). In addition, people make appraisals of whether their relationship to the environment affects their personal well-being (Lazarus, 1991a), the meaning and memories of the situations they face (Frijda, 1993), and their attributions of why good and bad outcomes occurred (Weiner, 1986). And emotional experiences are embedded deeply within language

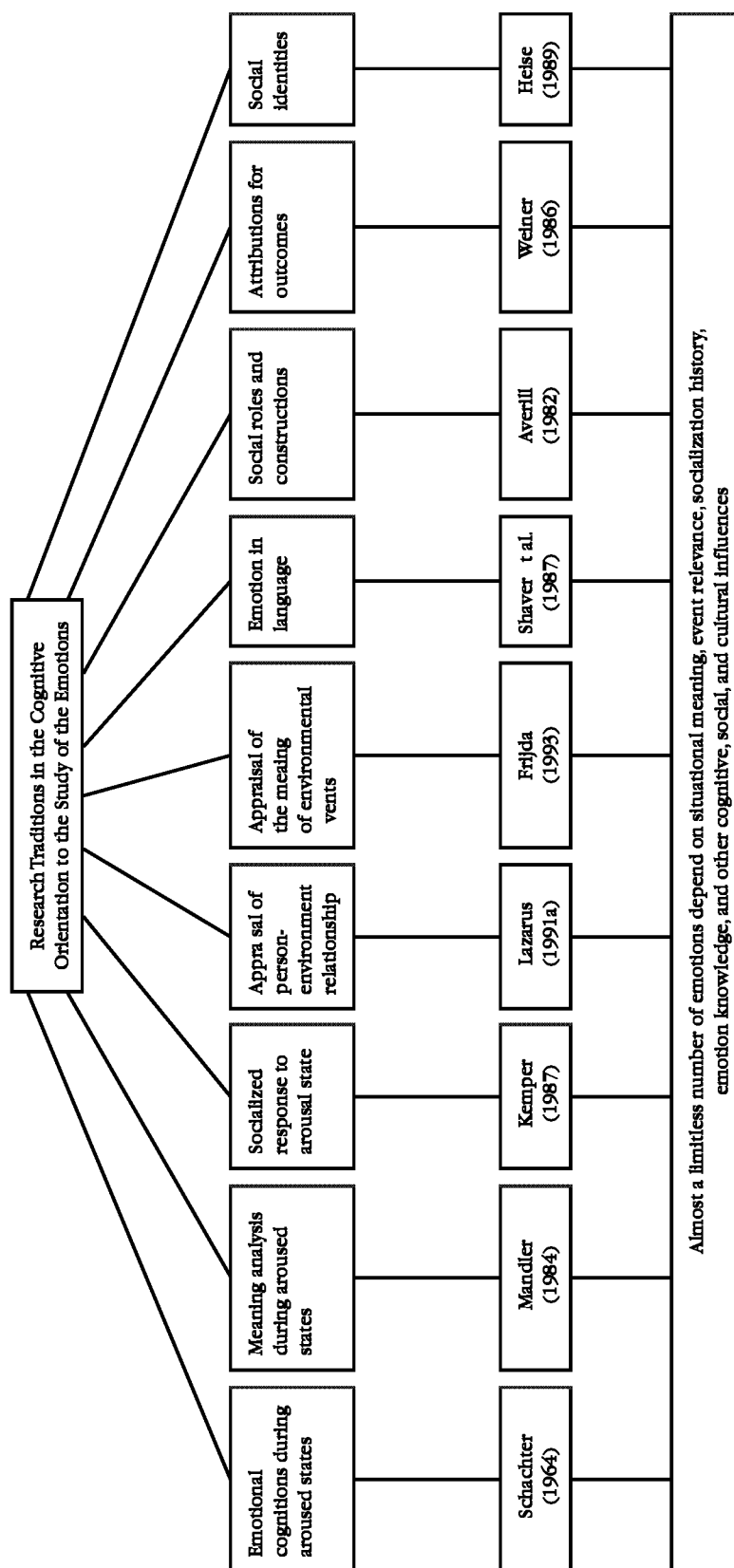


Figure 11.7 Nine Research Traditions in the Cognitive Study of Emotion

(Shaver et al., 1987), socially constructed ways of acting (Averill, 1982), and social roles such as “cheerleader” and “bully” (Heise, 1989).

Reconciliation of the Numbers Issue

Everyone—biologically and cognitively minded researchers—agrees that there are dozens of emotions. The debate therefore centers on whether some emotions are more fundamental or more basic than are others (Ekman & Davidson, 1994). A middle-ground perspective is to argue that each basic emotion is not a single emotion but rather a *family* of related emotions (Ekman, 1994a). For instance, anger is a basic emotion, but anger is also a family of emotions that include hostility, rage, fury, outrage, annoyance, resentment, envy, and frustration. Similarly, joy is a basic emotion, but joy is also a family of emotions that includes amusement, relief, satisfaction, contentment, and pride. Each member of a family share many of the characteristics of the basic emotion—its physiology, its subjective feeling state, its expressive characteristics, and so on (recall Figure 11.2). There are a limited number of these basic emotion families rooted in biology and evolution (as argued by the biologically minded theorists in Figure 11.6), but also there are a number of variations of these basic emotions via learning, socialization, and culture (as argued by the cognitively minded theorists in Figure 11.7). At least five such emotion families exist: anger, fear, disgust, sadness, and enjoyment (Ekman, 1992, 1994a)

Emotion families can also be understood from a more cognitive perspective. An analysis of the English language led one group of researchers to conclude that emotion knowledge involves five basic emotion prototypes: anger, fear, sadness, joy, and love (Shaver et al., 1987). According to this group of researchers, people learn increasingly finer distinctions within the causes and consequences of these five basic emotions. For instance, a young child’s emotional repertoire might include only anger, fear, sadness, joy, and love, but, after a good deal of experience and socialization, the child learns that different situations give rise to different variations of the basic emotion. For instance, it takes learning, experience, and socialization to understand the varieties of fear—alarm, shock, fright, horror, terror, panic, hysteria, mortification, anxiety, nervousness, tension, uneasiness, apprehension, worry, dread, and perhaps others. Thus, fear is the basic emotion, while greater sophistication with one’s language and cognition leads to further variations as acquired secondary emotions.

Basic Emotions

Any answer to the question of how many emotions there are forces one to commit to a level of specificity (Averill, 1994), which means that emotions can be conceptualized at a general level such as a family or prototype (e.g., anger) or at a situation-specific level (e.g., hostility, envy, frustration). In this section, emotions are considered at a general level. The so-called basic emotions are those that meet the following criteria (Ekman & Davidson, 1994):

1. Are innate rather than acquired or learned through experience or socialization.
2. Arise from the same circumstances for all people (personal loss makes everyone sad, irrespective of their age, gender, or culture).

3. Are expressed uniquely and distinctively (as through a universal facial expression).
4. Evoke a distinctive and highly predictable physiological patterned response.

Some researchers argue against the idea of basic emotions (Ortony & Turner, 1990), and others offer a list of basic emotions that is different from the one presented here. Despite this diversity of opinion, no list of basic emotions would vary far from including the six presented here: fear, anger, disgust, sadness, joy, and interest (from Ekman, 1992; Ellsworth & Smith, 1988a; Izard, 1991; Shaver et al., 1987; Weiner, 1986).

Fear

Fear is an emotional reaction that arises from a person's interpretation that the situation he or she faces is dangerous and a threat to one's well-being. Perceived dangers and threats can be psychological or physical. The most common fear-activating situations are those rooted in the anticipation of physical or psychological harm, a vulnerability to danger, or an expectation that one's coping abilities will not be able to match up to forthcoming circumstances. The perception that one can do little to cope with an environmental threat or danger is at least as important a source of fear as is any actual characteristic of the threat/danger itself (Bandura, 1983). Fear is therefore mostly about a perceived vulnerability to being overwhelmed by a threat or danger.

Fear motivates defense. It functions as a warning signal for forthcoming physical or psychological harm that manifests itself in autonomic nervous system arousal (as in the fight part of the fight or-flight response). The individual trembles, perspires, looks around, and feels nervous tension to protect the self. It is through the experience of fear that our emotion system tells us of our vulnerability (often in no uncertain terms). Protection motivation manifests itself either through escape or withdrawal from the object(s). Fleeing puts physical (or psychological) distance between the self and that which is feared. If fleeing is not possible, fear motivates coping, as by being quiet and still.

On a more positive note, fear can provide the motivational support for learning new coping responses that remove the person from encountering danger in the first place. Few highway drivers in a torrential rainfall, for instance, need to be reminded to pay attention to the slippery road (fear activates coping efforts), and experienced drivers are better at coping with such a danger than are novice drivers (fear facilitates the learning of adaptive responses). Fear therefore warns us of our vulnerability, and it also facilitates learning and activates coping.

Anger

Anger is a ubiquitous emotion (Averill, 1982). When people describe their most recent emotional experience, anger is the emotion that most often comes to mind (Scherer & Tannenbaum, 1986). Anger arises from restraint, as in the interpretation that one's plans, goals, or well-being have been interfered with by some outside force (e.g., barriers, obstacles, interruptions). Anger also arises from a betrayal of trust, being rebuffed, receiving unwarranted criticism, a lack of consideration from others, and cumulative annoyances (Fehr, Baldwin, Collins, Patterson, & Benditt, 1999). The essence of anger is the belief that the situation is not what it should be; that is, the restraint, interference, or criticism is illegitimate (de Rivera, 1981).

Anger is the most passionate emotion. The angry person becomes stronger and more energized (as in the fight part of the fight-or-flight response). Anger also increases people's sense of control (Lerner & Keltner, 2001). Anger makes people more sensitive and attuned to the injustices of what other people do (Keltner, Ellsworth, & Edwards, 1993), and the fight and sense of control are directed at overcoming or righting the illegitimate restraint. This attack can be verbal or nonverbal (yelling or slamming the door) and direct or indirect (destroying the obstacle or just throwing objects about). Other common anger-motivated responses are to express hurt feelings, talk things over, or avoid the other person altogether (Fehr et al., 1999). When people do act out their anger, research shows a surprising success rate (Tafrate, Kassinove, & Dundin, 2002). Anger often clarifies relationship problems, energizes political agendas, and spurs a culture to change for the better, as occurred with the civil rights movement, the woman's suffrage movement, and Americans' national response to the September 11, 2001, terrorists attacks (Tavris, 1989). In all these cases of anger serving a positive function, however, it is almost always the assertive, nonviolent expression of anger that pays off rather than its violent expression, because anger can serve an important alerting function ("Take me seriously!") that leads others to a deeper understanding of the other person and the anger-causing problem.

Anger is not only the most passionate emotion, it is also the most dangerous, as its purpose is to destroy barriers in the environment. About one-half of anger episodes include yelling or screaming, and about 10% of anger episodes lead to aggression (Tafrate et al., 2002). When anger prompts aggression, it produces needless destruction and injury, as when we shove a rival curse at a teammate, or thoughtlessly damage property. An anger-fueled temper also increases the person's likelihood of a heart attack. But, again, on a more positive note, anger can be a productive emotion. Anger is productive when it energizes vigor, strength, and endurance in our efforts to cope productively as we change the world around us into what it should be. And people (e.g., politicians) who express anger generally get more respect and status following a wrong than do people who express sadness or guilt (Tiedens & Linton, 2001). When circumstances change from what they should not be (injustice) to what they should be (justice), anger appropriately fades away (Lerner, Goldberg, & Tetlock, 1998).

Disgust

Disgust involves getting rid of or getting away from a contaminated, deteriorated, or spoiled object. Just what that object is depends on development and culture (Rozin, Haidt, & McCauley, 1993; Rozin, Lowery, & Ebert, 1994). In infancy, the cause of disgust is limited to bitter or sour tastes. In childhood, disgust reactions expand beyond distaste to include psychologically acquired revulsions and generally any object deemed to be offensive (Rozin & Fallon, 1987). By adulthood, disgust arises from our encounters with any object we deemed to be contaminated in some way, as in bodily contaminations (poor hygiene, gore, death), interpersonal contaminations (physical contact with undesirable people), and moral contaminations (child abuse, incest, infidelity). Cultural learning determines much of what the adult considers a bodily, interpersonal, or moral contamination, but people from most cultures rate disgusting things as those that are of animal origin and spread to contaminate other objects (e.g., a dead roach touching your

food triggers core disgust and pretty much contaminates the whole plate, emotionally speaking).

The function of disgust is rejection. Through disgust, the individual actively rejects and casts off some physical or psychological aspect of the environment. Consider these environmental invasions that the person, through the disgust emotion, seeks to reject (Rozin, Lowery, & Ebert, 1994): eating something bitter (bad taste), smelling ammonia or rotten meat (bad smell), eating an apple with a worm in it (contaminated food), watching a medical dissection (body violation), thinking about someone engaged in incest (moral violation), and sleeping in a hotel bed on which the linens have not been changed (interpersonal contamination).

Because disgust is phenomenologically aversive, it paradoxically plays a positive motivational role in our lives. Feeling disgusted, we wish to avoid contaminated objects and we learn the coping behaviors needed to prevent encountering (or creating) conditions that produce disgust. Therefore, because people wish to avoid putting themselves into disgusting situations, they change personal habits and attributes, discard waste and sanitize their surroundings, and reappraise their thoughts and values. They wash the dishes, brush their teeth, take showers, and exercise to avoid an out-of-shape or “disgusting” body.

Sadness

Sadness (or distress) is the most negative, aversive emotion. Sadness arises principally from experiences of separation or failure. Separation—the loss of a loved one through death, divorce, circumstances (e.g., travel), or argument—is distressing. In addition to being separated from the ones we love, we also experience separation from a place (hometown) and from a valued job, position, or status. Failure, too, leads to sadness, as in failing an examination, losing a contest, or being rejected from a group’s membership. Even failure outside of one’s volitional control can cause distress, as in war, illness, accidents, and economic depression (Izard, 1991).

Because it feels so aversive, sadness motivates the individual to initiate whatever behavior is necessary to alleviate the distress-provoking circumstances before they occur again. Sadness motivates the person to restore the environment to its state before the distressing situation. Following separation, the rejected lover apologizes, sends flowers, or telephones in an effort to repair the broken relationship. Following failure, a performer practices to restore confidence and to prevent the reoccurrence of a similar failure. That is, because we feel sad, we are more likely to apologize and to offer reparations. Unfortunately, many separations and failures cannot be restored. Under hopeless conditions, the person behaves not in an active, vigorous way but in an inactive, lethargic way that essentially leads to withdrawal.

One beneficial aspect of sadness is that it indirectly facilitates the cohesiveness of social groups (Averill, 1968). Because separation from significant people causes sadness and because sadness is such an uncomfortable emotion, its anticipation motivates people to stay cohesive with their loved ones (Averill, 1979). If people did not miss others so much, then they would be less motivated to go out of their way to maintain social cohesion. Similarly, if the student or athlete did not anticipate the possibility of suffering failure-induced distress, she would be less motivated to prepare and practice. So, while sadness feels miserable, it can motivate and maintain productive behaviors.

Negative Basic Emotions: Threat and Harm

The themes that organize the otherwise diverse emotions of fear, sadness, anger, and disgust are threat and harm. When threatening or harmful events are forecast or anticipated, we feel fear. During the struggle to fight off or to reject the threat or harm, we feel anger and disgust. Once the threat or harm has occurred, we feel sadness. In response to threat and harm, fear motivates avoidance behavior—fleeing the threat. Anger motivates fighting and vigorous counterdefense. Disgust motivates rejection of the bad event or object. Sadness leads to inactivity and withdrawal and is effective when it leads one to give up coping efforts in situations that he or she cannot flee from, reject, or fight against. Hence, fear, anger, disgust, and sadness work collectively to endow the individual with an emotion system to deal effectively with all aspects of threat and harm.

Joy

The events that bring joy include desirable outcomes—success at a task, personal achievement, progress toward a goal, getting what we want, gaining respect, receiving love or affection, receiving a pleasant surprise, or experiencing pleasurable sensations (Ekman & Friesen, 1975; Izard, 1991; Shaver et al., 1987). Joy is the emotional evidence that things are going well (e.g., success, achievement, progress, respect, love). The causes of joy—desirable outcomes related to personal success and interpersonal relatedness—are essentially the opposite of the causes of sadness (undesirable outcomes related to failure and separation/loss). How joy affects us also seems to be the opposite of how sadness affects us. When sad, we feel lethargic and withdrawn; when joyous, we feel enthusiastic and outgoing. When sad, we are often pessimistic; when joyous, we turn optimistic.

The function of joy is twofold. First, joy facilitates our willingness to engage in social activities. Smiles of joy facilitate social interaction (Haviland & Lelwica, 1987), and if the smiles keep coming, then they help relationships form and strengthen over time (Langsdorff, Izard, Rayias, & Hembree, 1983). Few experiences are as potent and as rewarding as are the smile and interpersonal inclusion. Joy is therefore a social glue that bonds relationships, such as infant and mother, lovers, coworkers, and teammates. Second, joy has a “soothing function” (Levenson, 1999). It is the positive feeling that makes life pleasant and balances life experiences of frustration, disappointment, and general negative affect. Joy allows us to preserve psychological well-being, even in the face of the distressing events that come our way. Joy also has a way of undoing the distressing effects of aversive emotions, as when parents sing and make funny faces to soothe distressed infants and when lovers show affection to soothe away an otherwise conflictual exchange (Carstensen, Gottman, & Levenson, 1995).

Interest

Interest is the most prevalent emotion in day-to-day functioning (Izard, 1991). Some level of interest is ever-present. Because this is so, increases and decreases in interest usually involve a shifting of interest from one event, thought, or action to another. In other words, we typically do not stop and start our interest, but rather, we redirect it from one object or event to another. The life events that direct our attention include those that involve our needs or well-being (Deci, 1992b). Other events that direct our

attention are those that instigate a moderate increase in the rate of our cortical neural firing, such as those associated with stimulus change, novelty, uncertainty, complexity, puzzles and curiosities, challenge, thoughts of learning, thoughts of achieving, and acts of discovery (Berlyne, 1966; Izard, 1991). Succinctly, what most people find interesting are those things they appraise as novel-complex, though people additionally need to feel competent that they can eventually make sense of the newness, novelty, and complexity that stands before them, as with modern art or a class lecture (Silvia, 2005).

Interest creates the desire to explore, investigate, seek out, manipulate, and extract information from the objects that surround us. Interest motivates acts of exploration, and it is in these acts of turning things around, upside down, over, and about that we gain the information we seek. Interest also underlies our desire to be creative, to learn, and to develop our competencies and skills (Renninger et al., 1992). A person's interest in an activity determines how much attention is directed to that activity and how well that person processes, comprehends, and remembers relevant information (Hidi, 1990; Renninger et al., 1992; Renninger & Wozniak, 1985; Schiefele, 1991; Shirey & Reynolds, 1988). Interest therefore enhances learning (Alexander et al., 1994). It is difficult to learn a foreign language, allocate time to read a book, or engage in most any learning activity without emotional support from interest. As a case in point, when interested, students persist longer at learning activities, spend more time studying, read more deeply, remember more of what they read, and make better grades (Silvia, 2006).

Positive Basic Emotions: Motive Involvement and Satisfaction

Motive involvement and motive satisfaction are the themes that unite the positive emotions of interest and joy. When a beneficial event related to our needs and well-being is anticipated, we feel interest. If and when the event materializes into motive satisfaction, we feel joy (or enjoyment). Interest motivates the approach and exploratory behavior necessary for promoting contact with the potentially motive-satisfying event. Interest also prolongs our task engagement so we can put ourselves in a position to experience motive satisfaction. Joy adds to and somewhat replaces interest once motive satisfaction occurs (Izard, 1991). Joy then promotes ongoing task persistence and subsequent reengagement behaviors with the motive-satisfying event. Together, interest and joy provide the emotional support to be fully and voluntarily involved in an activity (Reeve, 1989).

WHAT GOOD ARE THE EMOTIONS?

While feeling the angst of sadness, anger, or jealousy, people understandably ask themselves the following question: "What purpose do emotions serve—what good are they?" It is not uncommon for people who feel aversive emotions to wish that their emotion would just go away and leave them alone. Who wants to feel sad?

Work on the utility or function of emotion began with Charles Darwin's *The Expression of Emotions in Man and Animals* (1872), a less famous effort than his 1859 work on the evolution of species. In his work on emotions, Darwin argued that emotions help animals adapt to their surroundings. Displays of emotion help adaptation much in the same way that displays of physical characteristics (e.g., height) do. For example, the dog baring its teeth in defense of its territory helps it cope with hostile situations (by warding

off opponents). Such expressiveness is functional, and emotions are therefore candidates for natural selection.

Coping Functions

Emotions do not just occur out of the blue. They occur for a reason. From a functional point of view, emotions evolved because they helped animals deal with fundamental life tasks (Ekman, 1994a). To survive, animals must explore their surroundings, vomit harmful substances, develop and maintain relationships, attend immediately to emergencies, avoid injury, reproduce, fight, and both receive and provide caregiving. Each of these behaviors is emotion produced, and each facilitates the individual's adaptation to changing physical and social environments.

Fundamental life tasks are universal human predicaments, such as loss, frustration, and achievement (Johnson-Laird & Oatley, 1992). The emotion during life tasks energizes and directs behavior in adaptive ways (e.g., after separation, crying for help proved more effective than did other courses of action). That is, emotion and emotional behavior provide animals with ingrained and automated ways for coping with major challenges and threats to their welfare (Tooby & Cosmides, 1990).

As shown in Table 11.1, emotions serve at least eight distinct purposes: protection, destruction, reproduction, reunion, affiliation, rejection, exploration, and orientation (Plutchik, 1970, 1980). For the purpose of protection, fear energizes and directs the body for withdrawal and escape. To destroy some aspect of the environment (e.g., enemy, obstacle, restraint), anger prepares the body for attack. To explore the environment, anticipation sparks interest and readies the body for investigation. For every major life task, human beings evolved a corresponding, adaptive emotional reaction. The function of emotion is therefore to prepare us with an automatic, very quick, and historically successful response to life's fundamental tasks.

This line of reasoning leads to the following conclusion: There is no such thing as a "bad" emotion. Joy is not necessarily a good emotion, and anger and fear are not necessarily bad emotions (Izard, 1982). *All* emotions are beneficial because they direct attention and channel behavior to where it is needed, given the circumstances one faces.

Table 11.1 Functional View of Emotional Behavior

Emotion	Stimulus Situation	Emotional Behavior	Function of Emotion
Fear	Threat	Running, flying away	Protection
Anger	Obstacle	Biting, hitting	Destruction
Joy	Potential mate	Courting, mating	Reproduction
Sadness	Loss of valued person	Crying for help	Reunion
Acceptance	Group member	Grooming, sharing	Affiliation
Disgust	Gruesome object	Vomiting, pushing away	Rejection
Anticipation	New territory	Examining, mapping	Exploration
Surprise	Sudden novel object	Stopping, alerting	Orientation

Source: From "Functional View of Emotional Behavior," *Emotion: A Psychoevolutionary Synthesis* (p. 289), by R. Plutchik, 1980, New York: Harper & Row. Adapted with permission.

In doing so, each emotion provides a unique readiness for responding to a particular situation. From this point of view, fear, anger, disgust, sadness, and all other emotions are good. This is so because fear optimally facilitates protection, disgust optimally facilitates repulsion of contaminated objects, and so forth. Emotions are therefore positive, functional, purposive, and adaptive organizers of behavior.

Other biologically oriented emotion researchers stress greater flexibility in emotional ways of coping than is otherwise apparent from Table 11.1 (Frijda, 1994). That is, while fear essentially motivates protective behavior, it also readies us for additional and more flexible actions, including preventing the dangerous event from occurring in the first place or suppressing activity until the threat passes. Likewise, anger essentially motivates destructive action, but it also prepares us to enforce social norms or to discourage anger-causing events before they occur (e.g., discourage injustice, restraint, and insults with preparatory behavior like negotiating rules). Individual experience and cultural learning over time greatly expand the entries in the "Emotional Behavior" column in Table 11.1. This increased flexibility is important because it makes it clear that emotional responses are more flexible than are reflexes (Scherer, 1984b).

Social Functions

In addition to serving coping functions, emotions serve social functions (Izard, 1989; Keltner & Haidt, 1999; Manstead, 1991). Emotions:

1. Communicate our feelings to others.
2. Influence how others interact with us.
3. Invite and facilitate social interaction.
4. Create, maintain, and dissolve relationships.

Emotional expressions are potent, nonverbal messages that communicate our feelings to others. Through emotional expressions, infants nonverbally communicate what they cannot communicate verbally, as through the face (Fridlund, 1992), voice (Scherer, 1986), and emotional behavior in general (Huebner & Izard, 1988). At birth, infants are capable of expressing joy, interest, and disgust; by 2 months, infants can also express sadness and anger; and by 6 months, infants can express fear (Izard, 1989). Throughout infancy, interest, joy, sadness, disgust, and anger represent almost 100% of emotion-based facial expressions (Izard et al., 1995). Caregivers reliably recognize and accurately interpret these facial expressions (Izard, Huebner, Risser, McGinnes, & Dougherty, 1980). Infant facial expressions therefore guide caretakers' emotion-specific care (Huebner & Izard, 1988).

Emotional displays influence how people interact, as the emotional expression of one person can prompt selective behavioral reactions from a second person (Camras, 1977; Coyne, 1976a, 1976b; Frijda, 1986; Klinnert, Campos, Sorce, Emde, & Suejda, 1983). In a conflict situation over a toy, for instance, a child who expresses anger or sadness is much more likely to keep the toy than is a child who expresses no such emotion (Camras, 1977; Reynolds, 1982). The emotional expression nonverbally communicates to others what one's probable forthcoming behavior is likely to be. If the toy is taken away, the anger-expressing child communicates a probable forthcoming attack, whereas

the sadness-expressing child communicates a probable barrage of tears. The signal that one is likely to attack or cry often succeeds in regaining the lost toy (or preventing the toy from being taken in the first place). Hence, in the context of social interaction, emotions serve multiple functions, including informative (“This is how I feel”), forewarning (“This is what I am about to do”), and directive (“This is what I want you to do”) functions (Ekman, 1993; Schwartz & Clore, 1983). In this way, emotional expressions communicate social incentives (joy smile), social deterrents (angry face), and unspoken messages (embarrassment face) that smooth and coordinate social interactions (Fernald, 1992; Keltner & Buswell, 1997; Tronick, 1989).

Many emotional expressions are socially, rather than biologically, motivated. This assertion sounds strange because it is generally assumed that people smile when they feel joy and frown when they feel sad. Nonetheless, people frequently smile even when they do not feel joy; instead, people frequently smile when they wish to facilitate social interaction.

Ethologists studying smiling in primates found that chimpanzees use the voluntary smile sometimes to deflect potentially hostile behavior from dominant animals and other times to maintain or increase friendly interactions (van Hooff, 1962, 1972). Just as primates smile (bare their teeth) to appease dominants, young children smile when approaching a stranger, and children are more likely to approach a stranger who smiles than a stranger who does not smile (Connolly & Smith, 1972). Adults who are embarrassed socially are also likely to smile (Kraut & Johnston, 1979). In addition, the smile is a universal greeting display (Eibl-Eibesfeldt, 1972; van Hooff, 1972) that seems to say, nonverbally, “I am friendly; I would like us to be friends.” In each of these instances, smiling is socially, rather than emotionally, motivated.

The idea that a smile can be socially motivated leads to the question of whether smiling is typically an emotional expression of joy or a social expression of friendliness (Fernandez-Dols & Ruiz-Belba, 1995; Kraut & Johnston, 1979). To test this hypothesis, Robert Kraut and Robert Johnston (1979) observed people smiling while bowling, while watching a hockey match, and while walking down the street. The researchers wondered whether people smiled more often when engaged in social interaction or when experiencing a joy reaction to a positive event (a good bowling score, a goal for their hockey team, sunny weather). Generally speaking, bowlers, spectators, and pedestrians were more likely to smile socially (to smooth social interactions) than emotionally (in response to positive outcomes).

Why We Have Emotions

Life is full of challenges, stresses, and problems to be solved. Emotions exist as solutions to these challenges, stresses, and problems (Ekman, 1992; Frijda, 1986, 1988; Lazarus, 1991a; Scherer, 1994b). By coordinating and orchestrating feelings, arousal, purpose, and expression (the emotion processes in Figure 11.1), emotions “establish our position vis-à-vis our environment” (Levenson, 1999) and “equip us with specific, efficient responses that are tailored to problems of physical and social survival” (Keltner & Gross, 1999).

Some argue that emotions serve no useful purpose. They argue that emotions disrupt ongoing activity, disorganize behavior, and rob us of our rationality and logic (Hebb, 1949; Mandler, 1984). These emotion researchers grant that while emotions

BOX 11

served important evolutionary functions thousands of years ago, they no longer do so in the modern world. This position stands in stark contrast to the assertion that emotions prioritize behavior in ways that optimize adjustment to the demands we face (Lazarus, 1991a; Levenson, 1994a, 1999; Oatley & Jenkins, 1992; Plutchik, 1980). Everyone agrees that emotions affect the way we think, feel, and behave. So, the question hinges on whether emotions are adaptive and functional or whether emotions are maladaptive and dysfunctional. (see Box 11)

The reason that both sides of the “functional versus dysfunctional” question makes sense is because both are correct. Emotions exist as both a masterpiece of evolutionary design (as pointed out by emotion theorists) and also as excess baggage in the age of reason (as pointed out by Stoics, Buddhists, and others).

Human emotion operates within a two-system design (Levenson, 1999). The biological core of the emotion system is one that humans share with other animals, and this is the part of the emotion system that evolved to solve fundamental life tasks. Because only a few life tasks are truly fundamental, the emotion system responds in a stereotypical way that recruits and orchestrates a limited but highly appropriate set of responses. This way of responding can be characterized rather like a “time-tested recipe” (to borrow an example from Levenson, 1999). These prototypical ways of responding to fundamental life tasks are the same as those listed in Table 11.1. When situationally appropriate, these automated ways of responding to problems can be highly adaptive. But they can also be situationally inappropriate when activated under other circumstances (e.g., attacking one’s opponents is not always the best way to handle a situation). For emotions to be adaptive across many different situations, emotions need to be regulated and controlled.

As Robert Levenson (1999) points out, in the modern world, tigers rarely jump out at us, people rarely steal our food, and beasts rarely threaten to kill our young. Today’s threats are on a smaller scale and therefore do not require the same sort of massive mobilization of our emotion systems. Becoming competent in regulating one’s emotions generally improves with experience, and it constitutes a lifelong undertaking (Carstensen, 1995; Gross, Carstensen, Pasupathi, & Tsai, 1997). In the end, whether emotions serve us well depends on how able we are to self-regulate our emotion systems such that we experience regulation *of* emotion rather than regulation *by* emotion (Gross, 1999).

WHAT IS THE DIFFERENCE BETWEEN EMOTION AND MOOD?

A fifth fundamental question on the nature of emotion asks, What is the difference between emotion and mood (Ekman & Davidson, 1994; Russell & Barrett, 1999)? Several distinguishing criteria can be listed (Goldsmith, 1994), but three seem especially telling: different antecedents, different action-specificity, and different time course.

First, as to different antecedents, emotions and moods arise from different causes. Emotions emerge from significant life situations and from appraisals of their significance to our well-being. Moods, on the other hand, emerge from processes that are ill-defined and are oftentimes unknown (Goldsmith, 1994). Second, as to different action-specificity, emotions mostly influence behavior and direct specific courses of action. Moods, however, mostly influence cognition and direct what the person thinks about (Davidson, 1994). Third, as to different time course, emotions emanate from short-lived events that last for seconds or perhaps minutes, whereas moods emanate from mental events that last for hours or perhaps days. Hence, moods are more enduring than are emotions (Ekman, 1994a).

Everyday Mood

Most people have about 1,000 waking minutes in their day, but only a few of these actually include a prototypical emotion such as anger, fear, or joy (Clark, Watson, & Leeka,

1989; Watson & Clark, 1994). In contrast, the average person generally experiences an ever-present stream of moods, or “affect.” Though emotions are relatively rare in daily experience, people are always feeling something. What they typically feel is a mood, a way of feeling that often exists as an aftereffect of a previously experienced emotional episode (Davidson, 1994).

Mood exists as a positive affect state or as a negative affect state (i.e., good mood, bad mood—Watson, Clark, & Tellegen, 1988; Watson & Tellegen, 1985). Positive affect and negative affect are not, however, opposite ways of feeling. Instead, these two moods are independent—not opposite—ways of feeling (Diener & Emmons, 1984; Diener & Iran-Nejad, 1986). For example, during a job interview, people often report feeling both positive and negative affects simultaneously. The job interviewer typically feels both enthusiastic and nervous at the same time. Positive affect also varies systematically in accordance with the sleep–wake cycle, while negative affect does not (Watson, Wiese, Vaidya, & Tellegen, 1999). As shown in Figure 11.8, level of positive affect is quite low upon waking. It increases rapidly throughout the morning, and positive affect continues to rise gradually throughout the afternoon until it hits its peak from 6:00 P.M. to 9:00 P.M. Positive affect then declines rapidly throughout the late evening as it returns to its early-morning low level (Clark et al. 1989).

Positive affect reflects pleasurable engagement. It exists as a person’s current level of pleasure, enthusiasm, and progress toward goals. People who feel high positive affect typically feel enthusiastic and experience energy, alertness, and optimism, whereas those who feel low positive affect typically feel lethargic, apathetic, and bored.

Negative affect reflects unpleasant engagement. People who feel high negative affect typically experience dissatisfaction, nervousness, and irritability, whereas those who feel low negative affect are calm and relaxed. These feelings of alertness versus boredom (positive affect) and irritability versus relaxation (negative affect), rather than prototypical

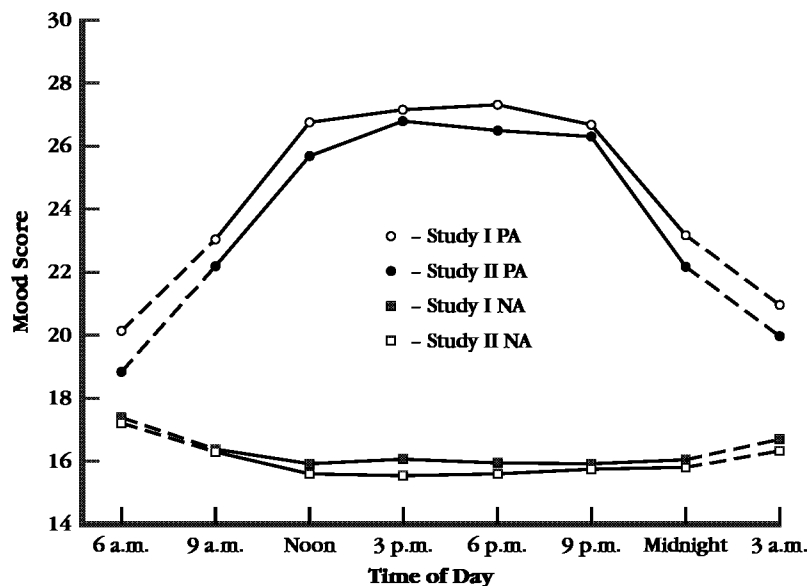


Figure 11.8 Levels of Positive Affect (PA) and Negative Affect (NA) as a Function of Time of Day in Two Studies

emotional states such as joy and fear, constitute the essential nature of everyday, ongoing affective experience—our everyday mood.

Positive and negative affect pertain not only to moods but also to broad cognitive, motivational, biological, and behavioral systems (Clark, Watson, & Mineka, 1994). Positive affect reflects a reward-driven, appetitive motivational system (Fowles, 1988), whereas negative affect reflects a punishment-driven, aversive motivational system (Gray, 1987a, 1987b). Basically, positive affect and a good mood support approach behavior, while negative affect and a bad mood support withdrawal (Watson et al., 1999). The positive affect system has its own neural substrate—dopaminergic pathways. These pathways are activated by the expectancy of desirable events (Ashby et al., 1999; Wise, 1996). The negative affect system has its own neural substrate—serotonergic and noradrenergic pathways. These pathways are activated by the expectancy of negative outcomes (MacLeod, Byrne, & Valentine, 1996). Again, these findings point to the conclusion that positive and negative affects are more independent ways of feeling than they are emotional or neural opposites. The expectation of desirable events activates dopaminergic pathways that generate positive affect and approach behavior (and does not impact negative affect processes), while the expectation of negative events activates serotonergic and noradrenergic pathways that generate negative affect and withdrawal behavior (and does not impact positive affect processes).

Positive Affect

Positive affect refers to the everyday, low-level, general state of feeling good (Isen, 1987). It is the warm glow that so often accompanies everyday pleasant experiences such as walking in the park on a sunny day, receiving an unexpected gift or good news, listening to music, or making progress on a task. Although we focus on the park scenery, good news, pleasant music, or positive feedback, the mild good feeling arises subconsciously. We may smile more, whistle while we walk, daydream about happy memories, or talk more excitedly, but the positive feelings typically remain outside our conscious attention. In fact, if someone brings the pleasant mood to our attention (“My, aren’t we in a good mood today!”), such attention paradoxically is the beginning of the end of the positive affect.

This lack of awareness of the positive affect stands in contrast to the more intense, attention-grabbing positive emotions, such as joy. The purpose of an emotion is to capture attention and direct coping behavior (so the person can adapt to situational demands effectively). Positive affect is more subtle. It affects neither attention nor behavior. Instead, positive affect subtly influences the information-processing flow—what we think about, the decisions we make, creativity, judgments, and so on (Isen, 1987, 2002).

Conditions That Make Us Feel Good

People have difficult times explaining why they feel good. If pressed, they typically say that life is generally going well. Mood researchers, on the other hand, have learned which conditions lead people to feel good, and most of these conditions create positive affect in ways such that people remain unaware of the causal source of their good moods (Isen, 1987). Consider these positive affect-inducing experimental manipulations of a small gain, amusement, or pleasure: Find money in the coin-return slot of a public

telephone (Isen & Levin, 1972), receive a gift of a bag of candy (Isen & Geva, 1987; Isen, Niedenthal, & Cantor, 1992), receive a free product sample (Isen, Clark, & Schwartz, 1976), receive a candy bar (Isen, Daubman, & Nowicki, 1987; Isen, Johnson, Mertz, & Robinson, 1985), learn that a performance was successful (Isen, 1970), receive a cookie (Isen & Levin, 1972), receive refreshments such as orange juice (Isen et al., 1985), a random act of kindness (Wilson, Centerbar, Kermer, & Gilbert, 2005), receive positive feedback (Isen, Rosenzweig, & Young, 1991), think about positive events (Isen et al., 1985), experience sunny weather (Kraut & Johnston, 1979), watch an amusing film (Isen & Nowicki, 1981), or rate funny cartoons (Carnevale & Isen, 1986).

Once instigated by an eliciting event (e.g., receiving a small gift), the warm glow of a positive mood continues for up to 20 minutes (Isen et al., 1976). Because we enjoy feeling good, happy people make decisions and act in ways that maintain their good moods for longer than 20 minutes (Forest, Clark, Mills, & Isen, 1979; Isen, Shalker, Clark, & Karp, 1978). More often than not, however, some rival event or interrupting life task distracts our attention away from the positive affect-inducing event. That is, we lose our positive mood by engaging in neutral and aversive events (e.g., boring work, congested traffic, bad news, a risk turned sour).

Benefits of Feeling Good

Compared to people in a neutral mood, people exposed to conditions that allow them to feel good are more likely to help others (Isen & Levin, 1972), act sociably (i.e., initiate conversations, Batson, Coke, Chard, Smith, & Taliaferro, 1979), express greater liking for others (Veitch & Griffitt, 1976), be more generous to others (Isen, 1970) and to themselves (Mischel, Coes & Raskoff, 1968), take risks (Isen & Patrick, 1983), act more cooperatively and less aggressively (Carnevale & Isen, 1986), solve problems in creative ways (Isen et al., 1987), persist in the face of failure feedback (Chen & Isen, 1992), make decisions more efficiently (Isen & Means, 1983), and show greater intrinsic motivation on interesting activities (Isen & Reeve, 2005). Consider two illustrations.

Positive affect facilitates our willingness to help others (Isen & Levin, 1972). A group of researchers conducted a field study at a local mall in which they randomly filled a telephone booth's coin return slot with or without change. Their thinking was that everyone would check the coin slot after making their telephone call and those that found the spare change would feel good while those that found no such spare change would continue to feel their regular day-to-day mood. After each participant left the telephone booth, the researchers arranged to have a young woman walk by the participant and "accidentally" drop an armful of books. If positive affect facilitates helping others, then the participants who received the spare change should be significantly more likely to help the woman than would the participants who did not receive the spare change. Results appear in Table 11.2. People in their normal and regular daily mood (did not receive the spare change) almost never helped (only 1 out of 25 helped). People in a good mood (did receive the spare change) almost always helped (fully 14 out of 16 helped). These results show that a very mild, pleasant feeling dramatically increased people's willingness to help a stranger in need.

Positive affect facilitates cognitive flexibility (Isen et al., 1992) and creative problem solving (Estrada, Isen, & Young, 1994, 1997; Isen et al., 1987). Alice M. Isen and her colleagues (1987) induced positive or neutral affect in groups of college students and

Table 11.2 Effect of Positive Affect on Helping Others

Condition	Females		Males	
	Helped	Did Not Help	Helped	Did Not Help
Positive Affect (Did Receive Dime)	8	0	6	2
Neutral Affect (Did Not Receive Dime)	0	16	1	8

Source: From, The effect of feeling good on helping: Cookies and kindness, by A. M. Isen & P. F. Levin, (1972), *Journal of Personality and Social Psychology*, 21, 384–388 Copyright 1972 American Psychological Association. Reprinted by permission.

then asked them to solve one of two problem solving tasks requiring creativity—the candle task (Dunker, 1945) or the Remote Associates Test (RAT; Mednick, Mednick, & Mednick, 1964). In the candle task, the participant receives a pile of tacks, a candle, and a box of matches and the instructions to attach the candle to the wall (a cork board) so that the candle can burn without dripping wax on the floor. In the RAT, the participant sees three words (*soul*, *busy*, *guard*) and is asked to generate a fourth word that relates to the other three (in this case, *body*). Positive affect participants solved the creativity-demanding candle task and gave creative (unusual or “remote”) associates to the RAT (Isen et al., 1987). In contrast, the candle task stumped the neutral affect participants, and they gave routine stereotypical responses to the RAT. Thus, there are inherent processing advantages conferred by feeling good, as positive affect acts as a resource in solving problems and attaining goals (Aspenwall, 1998).

The explanation as to *how* and *why* positive affect facilitates creativity, decision-making efficiency, sociability, prosocial behavior, persistence, and so on is not as straightforward as it might first appear to be. Being a mood rather than an emotion, positive affect influences cognitive processes, such as memories, judgments, and problem-solving strategies. It therefore influences the contents of working (short-term) memory by biasing what the individual thinks about and what memories and expectations come to mind (Isen, 1984, 1987, 2002). When feeling good, positive affect essentially serves as a retrieval cue to put the spotlight on positive material stored in memory (Isen et al., 1978; Laird, Wagener, Halal, & Szegda, 1982; Nasby & Yando, 1982; Teasdale & Fogarty, 1979). As a result, people who feel good have ready access to happy thoughts and positive memories (compared to people who feel neutral). With happy thoughts and pleasant memories salient in one’s mind, people show increased creativity, help others more, show persistence in the face of failure, make decisions efficiently, show high intrinsic motivation, and so on. This helps explain why short-term positive affect helps people be successful in a wide range of areas in their lives, including marriage, friendship, income, work, and health (Lyubomirsky, King, & Diener, 2005).

SUMMARY

This chapter addresses five questions central to understanding the nature of emotion. The first question asks, “What is an emotion?” Emotions have a four-part character in that they feature dimensions of feeling, arousal, purpose, and expression. Feelings give emotions a subjective component that has personal meaning. Arousal includes biological activity such as heart rate that prepares the body

for adaptive coping behavior. The purposive component gives emotion a goal-directed sense of motivation to take a specific course of action. The social component of emotion is its communicative aspect, as through a facial expression. Emotion is the psychological construct that coordinates and unifies these four aspects of experience into a synchronized, adaptive pattern.

The second question asks, “What causes an emotion?” Rephrased, this question debates whether emotion is primarily a biological or a cognitive phenomenon. According to the biological perspective, emotions arise from bodily influences such as neural pathways in the brain’s limbic system. According to the cognitive perspective, emotions arise from mental events such as appraisals of the personal meaning of the emotion-causing event. Both sides of the biology–cognition debate marshal together an impressive array of evidence to support their positions. Both biology and cognition play a pivotal role in the activation and regulation of emotion, and researchers specify two ways that biology and cognition cause emotion. The first argues for two parallel emotion systems—an innate, spontaneous, and primitive biological motion system and an acquired, interpretive, and social-cognitive emotion system. The second argues that emotion occurs as a dynamic, dialectical process rather than the linear output of either the biological or cognitive system.

The third question asks, “How many emotions are there?” The answer depends on one’s perspective. According to the biological perspective, human beings possess somewhere between 2 and 10 basic emotions. These researchers illustrate how primary emotions emerge from hard-wired limbic neural pathways, patterns of neural firing, universal facial expressions, evolutionary functions, and discrete patterns of facial feedback. According to the cognitive perspective, human beings possess a much richer, more diverse emotional repertoire than just the basic emotions. These researchers illustrate how an almost limitless number of secondary emotions are acquired through personal experiences, developmental histories, socialization influences, and cultural rules. Despite this diversity of opinion, most lists of emotion include the six discussed in some depth: fear, anger, distrust, sadness, joy, and interest.

The fourth question asks, “What good are the emotions?” It highlights that emotions serve a purpose. From a functional point of view, emotions evolved as biological reactions that helped us adapt successfully to fundamental life tasks, such as facing a threat. The emotion that arises during an important life task serves a goal-directed purpose that has coping and social purposes. Without a sophisticated emotional repertoire, people would function poorly in their physical and social environments. Still, people need to regulate their emotions. Whether emotions serve us well depends on how able we are to experience regulation of emotion rather than regulation by emotion.

The final question asks, “What is the difference between emotion and mood?” Emotions arise in response to a specific event, motivate specific adaptive behaviors, and are short-lived. Moods arise from ill-defined sources, affect cognitive processes, and are long-lived. Mood exists as a positive or as a negative affect state. Positive affect refers to the everyday, low-level, general state of feeling good. When people feel good, they are more sociable, cooperative, creative, persistent during failure, efficient in their decision making, and intrinsically motivated during interesting tasks. Positive affect exerts these effects by affecting cognitive processes such as memories and judgments. As a result, people who feel good have greater access to happy thoughts and positive memories and therefore behave in ways that reflect easy access to happy thoughts (e.g., more creative, more helpful).

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Chapter 12

Aspects of Emotion

BIOLOGICAL ASPECTS OF EMOTION

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SUMMARY

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Try to look sad—try to produce a sad facial expression. As you try this, attend to the changing sensations you feel from the movements of your facial musculature. If you just pouted out the lower lip and pulled down the corners of your mouth, then you probably did not feel too sad. So, try this again.

Produce a second sad facial expression. But this time move not only your lower lip and corners of your mouth but also move your eyebrows inward at the same time. Moving your eyebrows inward will take some skill, so pretend that you have a couple of golf tees attached to the inner corners of the eyebrows. Pretend these golf tees are about an inch apart and pointing outward from your face in a parallel way (base of each tee rests on the inner eyebrow with its tip extending outward). Now move your eyebrows inward until the tips of the golf tees touch. Now try to move all three of these muscles together—touch the golf tees together, pout your lower lip, and turn the corners of your mouth down (Larsen, Kasimatis, & Frey, 1992).

Did you feel anything as you were attempting this facial expression? Did you sense a hint of a sad feeling coming on? Did your heart rate drop a little? Any vague urge to cry? If so, the feeling will be mild because a posed facial expression is not as authentic and emotion-producing as a spontaneous facial expression. But the mild sad feeling via a patterned facial expression is a good way to introduce one of the many aspects of emotion discussed in this chapter—in this case, the “facial feedback hypothesis.”

As important life events come our way, these events activate biological and cognitive reactions in us. The resulting biological and cognitive processes generate emotion. And the emotion readies us to cope adaptively with the important life event before us. An outline of the biological and cognitive processes involved in emotion appears in Table 12.1. The first half of this chapter overviews the biological processes in emotion (lefthand side), while the second half of the chapter overviews the cognitive processes in emotion (righthand side).

BIOLOGICAL ASPECTS OF EMOTION

Emotions are, in part, biological reactions to important life events. The list of biological events in Table 12.1 is important because these entries identify the body’s emotion-related biological reactions to important life events. Facing a situation of personal significance (e.g., a threat), the body prepares itself to cope effectively (e.g., gets ready to run) by activating the following: (1) heart, lungs, and muscles (autonomic nervous system); (2) glands and hormones (endocrine system); (3) limbic brain structures such as the amygdala (neural brain circuits); (4) neural activity and the pace of information

Table 12.1 Biological and Cognitive Aspects of Emotion

Biological Aspects	Cognitive, Social, and Cultural Aspects
1. Autonomic nervous system	1. Appraisals
2. Endocrine system	2. Knowledge
3. Neural brain circuits	3. Attributions
4. Rate of neural firing	4. Socialization history
5. Facial feedback	5. Cultural identities

processing (rate of neural firing); and (5) discrete patterns of the facial musculature (facial feedback). With these biological systems engaged, the person experiences emotion and is significantly more readied to cope with the impending threat.

Emotion study began about 100 years ago by asking what role the autonomic nervous system played in the subjective experience of emotion. The first theory of emotion, the James–Lange theory, asked whether or not the different emotions each had unique bodily reactions associated with them. We all know that fear and joy feel different, but do fear and joy also have their own unique bodily reactions? Do our heart, lungs, and hormones behave one way when we are afraid yet another way when we experience joy? And if so, do these biological differences explain why the emotions we experience are different? Does the pattern of activity in our heart, lungs, and hormones actually cause the felt fear and felt joy?

James–Lange Theory

Personal experience suggests that we experience an emotion and that the felt emotion is quickly followed by bodily changes. As soon as we see the flashing red lights and hear the siren of a police car, fear arises and the feeling of fear subsequently makes our heart race and our palms sweat. The sequence of events seems to be stimulus → emotion → bodily reaction. William James (1884–1890, 1894) argued against this common view. He suggested that our bodily changes do not follow the emotional experience; rather, emotional experience follows and depends on our bodily responses to the flashing lights and siren sounds. Hence, bodily changes cause emotional experience: stimulus → bodily reaction → emotion.

James's theory rested on two assumptions: (1) The body reacts uniquely (discriminatorily) to different emotion-eliciting events, and (2) the body does not react to nonemotion-eliciting events. To appreciate James's hypotheses, think of your body's physiological responses to a shower that suddenly and unexpectedly turns cold. The physiological reaction—the increased heart rate, quickened breath, and widened eyes—begins before you have time to think about why your heart is racing and why your eyes are widening. The body reacts and the ensuing emotional reactions are on us before we are aware of what is happening. James argued that such instantaneous bodily reactions occur in discernible patterns, and emotional experience is a person's way of making sense of each different pattern of bodily reactions. If the bodily changes did not occur, then the ensuing emotion would not occur.

The James–Lange theory of emotions quickly became popular, but it also met with criticism (Cannon, 1927).¹ Critics argued that the sort of bodily reactions James referred to were actually part of the body's general mobilizing fight-or-flight response that did not vary from one emotion to the next (Cannon, 1929; Mandler, 1975; Schachter, 1964).²

¹At the same time James presented his ideas, a Danish psychologist, Carl Lange (1885), proposed essentially the same (but more limited) theory. For this reason, the idea that emotions emanate from our interpretation of patterns of physiological arousal is traditionally called the James–Lange theory (Lange & James, 1922).

²For instance, does a person experience specific emotions after taking a stimulant drug known to induce bodily changes—increase heart rate, minimize gastrointestinal activity, and dilate the bronchioles? Drug-induced visceral stimulation leads people to feel “as if afraid” or “as if going to weep without knowing why” rather than afraid or sad *per se* (i.e., people feel generally aroused but not specifically afraid).

These critics also argued that emotional experience was quicker than physiological reactions. That is, while a person feels anger in a 10th of a second, it takes this person's nervous system a full second or so to activate important glands and send excitatory hormones through the bloodstream. These critics contended that the role of physiological arousal was to augment, rather than cause, emotion (Newman, Perkins, & Wheeler, 1930). Critics concluded that the contribution of physiological changes to emotional experience was small, supplemental, and relatively unimportant. A decade after it was proposed, the first major theory of emotion was in doubt.

Contemporary Perspective

In the face of criticism, James's ideas faded out of favor, and rival theories of emotion emerged and became popular (e.g., see Schachter & Singer, 1962). Nonetheless, his insights continue to guide contemporary study (Ellsworth, 1994; Lang, 1994), and contemporary research supports the physiological specificity in a few emotions (Buck, 1986; Levenson, 1992; Schwartz, 1986). Paul Ekman, Robert Levenson, and Wallace Friesen (1983), for example, studied whether each of several emotions does or does not have a unique pattern of bodily changes. These researchers recruited people who could experience emotions on command (professional actors) and asked each to relive five different emotions—anger, fear, sadness, joy, and disgust—while the researchers measured for emotion-specific patterns of physiological activity. Distinct differences in heart rate (HR) and skin temperature (ST) emerged. With anger, HR and ST both increased. With fear, HR increased while ST decreased. With sadness, HR increased while ST was stable. With joy, HR was stable while ST increased. And with disgust, both HR and ST decreased. Just as James suspected, different emotions did indeed produce distinguishable patterns of bodily activity.

Persuasive evidence exists for distinctive autonomic nervous system (ANS) activity associated with anger, fear, disgust, and sadness (Ekman & Davidson, 1993; Ekman et al., 1983; Levenson, 1992; Levenson, Carstensen, Friesen, & Ekman, 1991; Levenson, Ekman, & Friesen, 1990; Sinha & Parsons, 1996; Stemmler, 1989). These patterns of ANS activity supposedly emerged because they were able to recruit ways of behaving that proved to be adaptive. For instance, in a fight that arouses anger, increased heart rate and skin temperature facilitate strong, assertive behavior. Some implications of emotion-distinctive ANS activity are discussed in Box 12.

Only a few emotions have distinct ANS patterns, however. If no specific pattern of behavior has survival value for an emotion, there is little reason for the development of a specific pattern of ANS activity (Ekman, 1992, 1994a). For instance, what is the most adaptive behavioral pattern to jealousy? to joy? hope? For these emotions, no single adaptive activity seems universally most appropriate, as adaptive coping depends more on the specifics of the situation than on the emotion itself. Hence, there is little reason to expect a single pattern of ANS activity to evolve.

In discussing the James–Lange theory of emotion, the fundamental question is whether the physiological arousal causes, or just follows, emotion activation. This question is important because if arousal causes emotion, then the study of physiological arousal becomes the cornerstone for any understanding of emotion. But if arousal merely follows and augments emotion, physiological activity is therefore much less important—noteworthy, but not vital. Contemporary researchers generally agree that

BOX 12

physiological arousal accompanies, regulates, and sets the stage for emotion, but it does not directly cause it. The modern perspective is that emotions recruit biological and physiological support to enable adaptive behaviors such as fighting, fleeing, and nurturing (Levenson, 1994b).

Specific Neural Circuits

Just as early researchers looked for emotion-specific patterns of physiological activity, contemporary researchers search for emotion-specific patterns in brain activity (Gray,

1994; LeDoux, 1987; Panksepp, 1982, 1986). For instance, Jeffrey Gray's (1994) neuroanatomical findings (with nonhuman mammals) document the existence of three distinct neural circuits in the brain, each of which regulates a distinctive pattern of emotional behavior: (1) a *behavioral approach system* that readies the animal to seek out and interact with attractive environmental opportunities, (2) a *fight-or-flight system* that readies the animal to flee from some aversive events but to defend aggressively against other events, and (3) a *behavioral inhibition system* that readies the animal to freeze in the face of aversive events. These three neural circuits underlie the four emotions of joy, fear, rage, and anxiety.

Specific Brain Areas

Chapter 3 covered the neurological (brain) basis of emotion. Different parts of the amygdala generate different negative emotions, including fear, anger, and anxiety. The left prefrontal cortex generates joy and positive affect; the right prefrontal cortex generates fear and negative affect. More generally, the dopamine pathways throughout the limbic system underlies positive affect. The basic idea is that subcortical (noncognitive) brain areas, when activated, are fully capable of generating and regulating specific emotions.

Neural Activation

Different emotions are activated by different rates of cortical neural firing (Tomkins, 1970). Neural firing refers to the pattern of electrocortical activity (in the brain) at any given time. According to Silvan Tomkins, there are three basic patterns of neural firing: activity increases, activity decreases, or activity remains constant. Whether the rate of neural firing is increasing, decreasing, or constant depends mostly on environmental events. For example, if you are sleeping (a low rate of neural firing, as measured by the electroencephalogram, or EEG) and a cat jumps on your face (a stimulating event), the rate of neural firing will increase. If you are at a rock concert (another stimulating event) and exit to relative quiet, the rate of neural firing will decrease. Other times, neural activity is constant, as in persistent cognitive effort while reading the newspaper.

With these three basic patterns of neural firing, the person is equipped for virtually every important life event. If neural firing suddenly increases, the person experiences one class of emotions—surprise, fear, or interest—with the specific emotion depending on the suddenness of the increased rate of neural firing (i.e., slight increase → interest, moderate increase → fear, and dramatic increase → surprise). If neural firing reaches and maintains a high level, then the constant (and high) neural firing activates either distress or anger, depending on the magnitude of the neural stimulation (i.e., continuously high → distress, continuously very high → anger). Finally, if neural firing decreases, joy is activated, as the individual laughs and smiles with relief. The relationship between each of these changes in the rate of neural firing and its associated emotion appears in Figure 12.1.

Consider the neural activity of an audience watching a horror movie. First, the audience is slowly introduced to the characters, setting, and circumstances of the plot. Exposure to all this new information gradually increases neural firing, and the audience becomes interested. Suddenly, the crazy man with an axe jumps out from behind the bushes, an event that drastically increases the audience's neural firing and activates

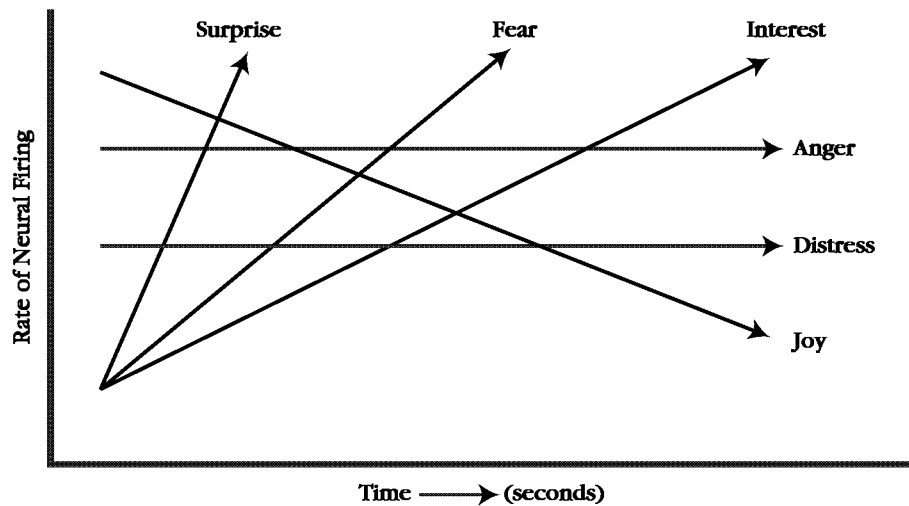


Figure 12.1 Emotion Activation as a Function of Changes in the Rate of Neural Firing

Source: From "Affect as the Primary Motivational System," by S. S. Tomkins (1970) in M. B. Arnold (Ed.), *Feelings and emotions* (pp. 101–110), New York: Academic Press.

surprise. Later, the audience watches the protagonist move through the dark forest and see strange sights. The audience's neural firing quickens and arouses fear. If the neural firing remains high, it arouses distress. So, the writer makes sure to toss in a joke or two and has the hero and heroine conquer the crazy man in the end, events that decrease the rate of neural firing and activate joy.

Differential Emotions Theory

Differential emotion theory takes its name from its emphasis on basic emotions serving unique, or *different*, motivational purposes (Izard, 1991, 1992, 1993; Izard & Malatesta, 1987). The theory endorses the following postulates (Izard, 1991):

1. Ten emotions constitute the principal motivation system for human beings.
2. Unique feeling: Each emotion has its own unique subjective, phenomenological quality.
3. Unique expression: Each emotion has its own unique facial-expressive pattern.
4. Unique neural activity: Each emotion has its own specific rate of neural firing that activates it.
5. Unique purpose/motivation: Each emotion generates distinctive motivational properties and serves adaptive functions.

The 10 discrete emotions that fit these 5 postulates appear in Table 12.2. Each emotion, according to differential emotions theory, operates as a system that coordinates feeling (postulate 2), expression (postulate 3), neural activity (postulate 4), and purpose/motivation (postulate 5) components. Notice how closely these four aspects of emotion correspond to the four aspects of emotion introduced at the start of Chapter 11 (see Figure 11.1).

Table 12.2 Izard's 10 Fundamental Emotions Included in His Differential Emotions Theory

Positive Emotions	Neutral Emotions	Negative Emotions
Interest	Surprise	Fear
Joy		Anger
		Disgust
		Distress
		Contempt
		Shame
		Guilt

Differential emotions theory argues that these 10 discrete emotions act as motivation systems that prepare the individual for acting in adaptive ways (Izard, 1989, 1991, 1992). Each emotion exists to provide the individual with an organized heuristic for dealing effectively with life tasks and problems that are both important and recurring (e.g., establish social bonds, confront threats)

Seeing the list of emotions in Table 12.2 is likely to conjure up a question such as the following: Where are emotions like jealousy, hope, love, hate, smugness, and worry? Biologically minded theories generally do not count experiences such as these among the basic emotions. Paul Ekman (1992) offers seven reasons to explain why:

1. Emotion families exist such that many nonbasic emotions are experienced-based derivatives of a single basic emotion (e.g., anxiety is a derivative of fear).
2. Many emotion terms actually better describe moods (e.g., irritation).
3. Many emotion terms actually better describe attitudes (e.g., hatred).
4. Many emotion terms actually better describe personality traits (e.g., hostile).
5. Many emotion terms actually better describe disorders (e.g., depression).
6. Some nonbasic emotions are blends of basic emotions (e.g., romantic love blends interest, joy, and the sex drive).
7. Many emotion words refer to specific aspects of a basic emotion (e.g., what elicits the emotion [homesickness] or how a person behaves [aggression]).

Facial Feedback Hypothesis

According to the facial feedback hypothesis, the subjective aspect of emotion stems from feelings engendered by (1) movements of the facial musculature, (2) changes in facial temperature, and (3) changes in glandular activity in the facial skin. Therefore, emotions are “sets of muscle and glandular responses located in the face” (Tomkins, 1962). In other words, emotion is the awareness of proprioceptive feedback from facial behavior.

Upon being introduced to the hypothesis that emotion is facial feedback information, the reader might be a bit skeptical—“C’mon, smiling makes you happy?” But consider the following sequence of events depicted in Figure 12.2 to understand how sensations from the face feed back to the cortical brain to produce emotional experience (Izard, 1991). Exposure to an external (loud noise) or internal (memory of being

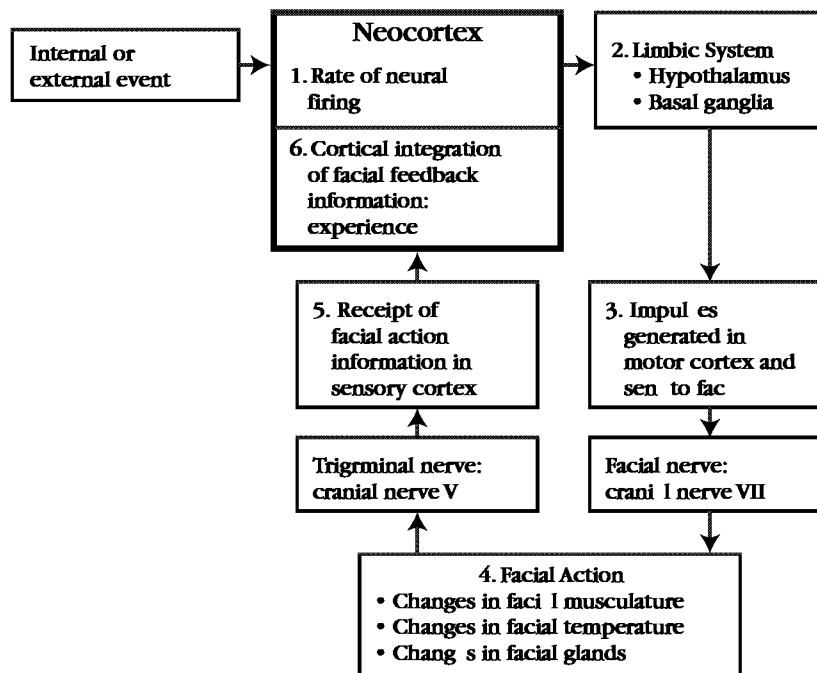


Figure 12.2 Sequence of the Emotion-Activating Events According to the Facial Feedback Hypothesis

harmed) event increases the rate of neural firing quickly enough to activate a subcortical emotion program such as fear (#1 in Figure 12.2). The subcortical brain (limbic system) possesses innate, genetically wired, emotion-specific programs (#2). When activated, these programs send impulses to the basal ganglia and facial nerve to generate discrete facial expressions (#3). Within microseconds of the displayed fear facial expression (#4), the brain interprets the proprioceptive stimulation (which muscles are contracted, which muscles are relaxed, changes in blood flow, changes in skin temperature, glandular secretions; #5). This particular pattern of facial feedback is cortically integrated—made sense of—to give rise to the subjective feeling of fear (#6). Only then does the frontal lobe of the cortex become aware of the emotional state at a conscious level. Quickly thereafter, the whole body joins the facial feedback to become involved in the fear emotion as the glandular-hormonal, cardiovascular, and respiratory systems become aroused and amplify and sustain the activated fear experience.

Facial feedback does one job: emotion activation (Izard, 1989, 1994). Once an emotion is activated, it is the emotion program, not the facial feedback, that then recruits further cognitive and bodily participation to maintain the emotional experience over time. The person then becomes aware of and monitors not her facial feedback but her changes in heart rate, respiration, muscle tonus, posture, and so on.

Facial action also changes brain temperature, such that facial movements associated with negative emotion (sadness) constrict breathing, raise brain temperature, and produce negative feelings, whereas facial movements associated with positive emotion (happiness) enhance breathing, cool brain temperature, and produce positive feelings (McIntosh, Zajonc, Vig, & Emerick, 1997; Zajonc, Murphy, & Inglehart, 1989). To make sense of

this, make a sad facial expression and see if the facial action around the nose does not constrict your air flow a bit. Also, make a joy facial expression and see if that facial action (e.g., raising the cheeks) does not encourage and open up nasal air flow. The changing brain temperatures do have (mild) emotional consequences.

Facial Musculature

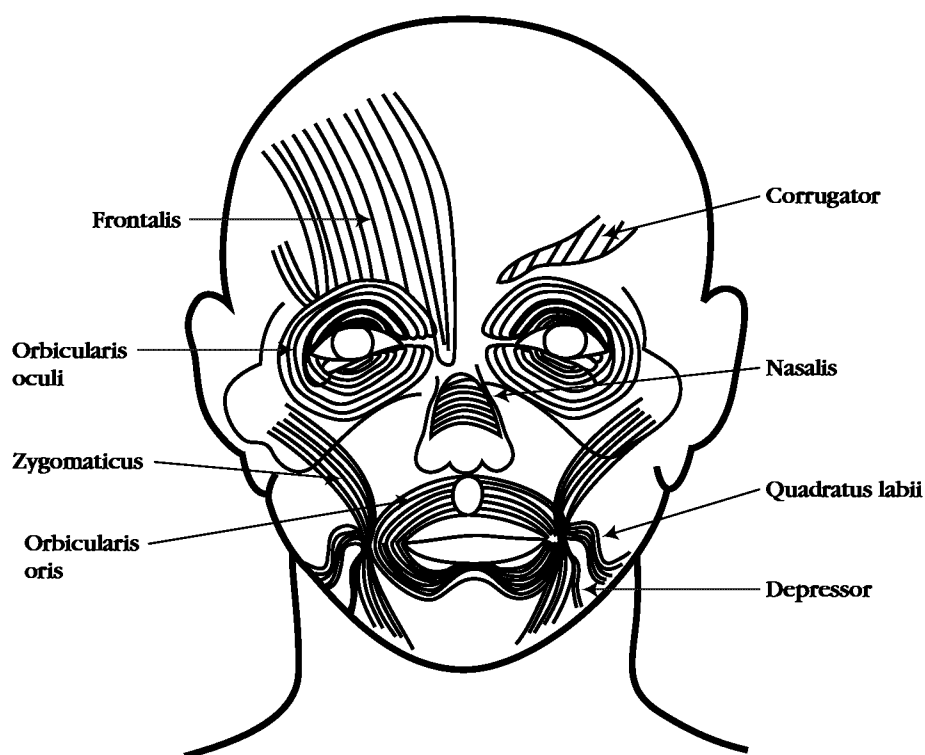
There are 80 facial muscles, 36 of which are involved in facial expression. For purposes of exposition, however, the eight facial muscles shown in Figure 12.3 are sufficient for differentiating among the basic emotions (for more information, see Ekman & Friesen, 1975; Izard, 1971). The upper face (the eyes and forehead) has three major muscles: the frontalis (covers the forehead), corrugator (lies beneath each eyebrow), and orbicularis oculi (surrounds each eye). The middle face has two major muscles: the zygomaticus (extends from the corners of the mouth to the cheekbone) and the nasalis (wrinkles the nose). The lower face has three major muscles: the depressor (draws the corners of the mouth downward), the orbicularis oris (circular muscle surrounding the lips), and the quadratus labii (draws the corners of the mouth backward).

Patterns of facial behavior produce discrete emotions. Anger, fear, disgust, distress, and joy, for instance, all have a recognizable facial expression. These facial expressions are described muscle-by-muscle in words in Figure 12.3 and in pictures in Figure 12.4 (Ekman & Friesen, 1975). Two additional emotions are associated with a particular pattern of facial behavior: interest (Reeve, 1993) and contempt (Ekman & Friesen, 1986). The interest expression is illustrated in 18 of the 19 faces shown in Figure 12.5 (all but the boy in the lower right corner). For interest, the orbicularis oculi open the eyelids and the orbicularis oris slightly parts the lips open (notice the unique positions of the eyes and mouth). For contempt, the zygomaticus unilaterally raises the corner of one lip upward. In contempt, the person “snarls” upward one side of the mouth. Pride too can be universally recognized, though pride expresses itself beyond the face (i.e., small smile, head tilted slightly back, expanded posture, arms akimbo with hands on hips; Tracy & Robins, 2008).

Test of the Facial Feedback Hypothesis

Feedback from facial behavior, when transformed into conscious awareness, constitutes the experience of emotion (Laird, 1974; Tomkins, 1962, 1963). This is the facial feedback hypothesis (FFH). Investigations to test the validity of the FFH have used two different methodologies, because there are two testable versions of the FFH—the strong version and the weak version (McIntosh, 1996; Rutledge & Hupka, 1985).

In its strong version, the FFH proposes that manipulating one’s facial musculature into a pattern that corresponds to an emotion display (e.g., see Figure 12.4) will activate that emotional experience. In other words, frowning the lips and raising the inner eyebrows activates sadness (recall the example at the beginning of this chapter). In empirical tests, an experimenter instructs a participant to contract and relax specific muscles of the face and, with a particular facial expression displayed, complete a questionnaire to assess emotional experience. For example, in one study, participants were instructed to (1) “raise your brows and pull them together,” (2) “now raise your upper eyelids,” and (3) “now also stretch your lips horizontally, back toward your ears” (Ekman et al., 1983).



Facial Muscle	Anger	Fear	Disgust	Sadness	Joy
Frontalis (Forehead)	n/a	contracts, producing forehead wrinkles	n/a	n/a	n/a
Corrugator (Eyebrows)	draws eyebrows in and down	raises inner corners of eyebrows	n/a	raises and draws together inner corners of eyelids	n/a
Orbicularis Oculi (Eyes)	tenses lower eyelids upward	raises upper eyelids, tenses lower eyelids	n/a	raises upper inner corner of eyelids	relaxes, showing wrinkles below eyes
Nasalis (Nose)	n/a	n/a	wrinkles nose	n/a	n/a
Zygomaticus (Cheeks)	n/a	n/a	raises cheeks	n/a	1. pulls corners of lip back and up; 2. raises cheeks, showing Crow's feet below eyes
Orbicularis Oris (Lips)	presses lips firmly together	n/a	raises upper lip	n/a	n/a
Quadratus Labii (Jaw)	n/a	pulls lips backward	n/a	n/a	n/a
Depressor (Mouth)	n/a	n/a	n/a	pull corners of lips down	n/a

Figure 12.3 Eight Major Facial Muscles Involved in the Expression of Emotion

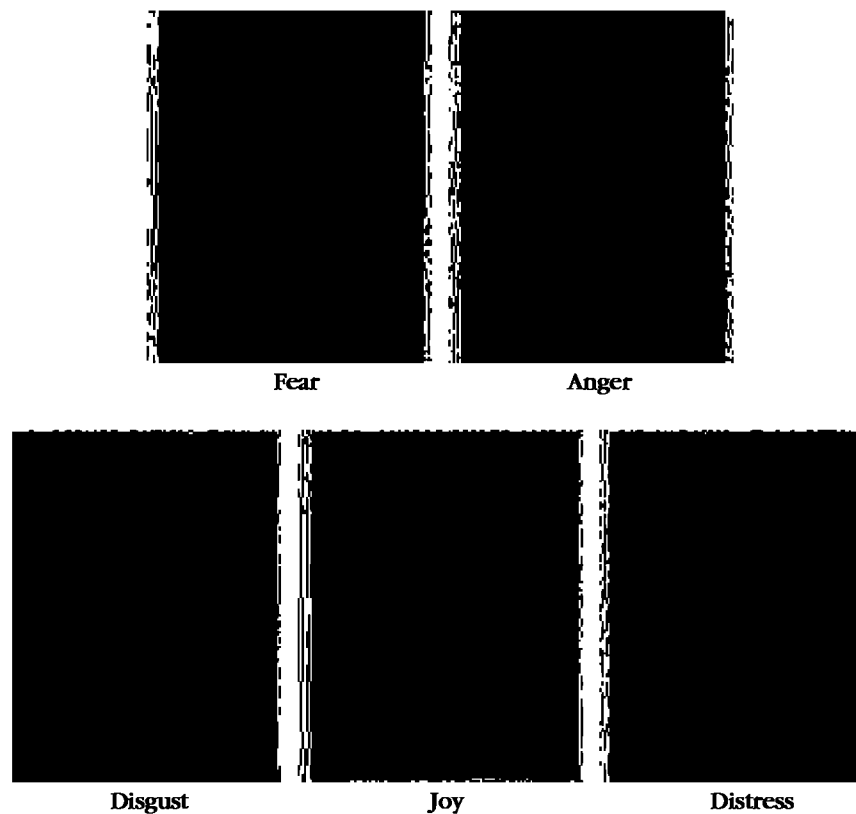


Figure 12.4 Facial Expressions for Five Emotions

So posed, the participants were asked about their emotional state (fear, in this case) on a questionnaire. Research has both supported (Laird, 1974, 1984; Larsen et al., 1992; Rutledge & Hupka, 1985; Strack, Martin, & Stepper, 1988) and refuted (McCaul, Holmes, & Solomon, 1982; Tourangeau & Ellsworth, 1979) the strong version of the FFH. One area of consensus is that a posed facial musculature produces reliable changes in physiological reactions, such as changes in cardiovascular and respiratory rates (Ekman et al., 1983; Tourangeau & Ellsworth, 1979). It is still debated whether the posed facial musculature produces emotional experience, but most studies suggest that it does produce at least a small effect (Adelmann & Zajonc, 1989; Izard, 1990; Laird, 1984; Matsumoto, 1987; Rutledge & Hupka, 1985).

In its weaker (more conservative) version, the FFH proposes that facial feedback modifies the intensity of (rather than causes) the emotion. Thus, managing one's facial musculature into a particular emotional display will augment (exaggerate) but will not necessarily activate (cause) the emotional experience. In other words, if you intentionally smile when you are already joyful, then you will feel a more intense joy. In one experiment, participants either exaggerated or suppressed their spontaneous facial expressions while watching a video, which depicted either a pleasant, neutral, or unpleasant scenario (Zuckerman, Klorman, Larrance, & Spiegel, 1981). Exaggerating naturally occurring facial expressions did augment both emotional and physiological experience, just as



Figure 12.5 Eighteen Facial Expressions of Interest

suppressing naturally occurring facial expressions softened both emotional and physiological experience (Lanzetta, Cartwright-Smith, & Kleck, 1976).

Unlike its stronger version, the weaker version of the FFH has received a consensus of support (McIntosh, 1996; Soussignan, 2002). These results highlight the two-way street between the emotions we feel and the emotions we express: Emotions activate facial expressions, and facial expressions, in turn, feed back to exaggerate and suppress the emotions we feel. Critics contend, however, that the contribution of such facial feedback is small and that other factors are more important (Matsumoto, 1987).

Are Facial Expressions of Emotion Universal Across Cultures?

The facial feedback hypothesis assumes that facial expressions are innate. But much facial behavior is surely learned. It is a rare individual who has not learned to express the polite smile and to inhibit the angry face while talking with the boss. But the fact

that some facial behavior is learned (and therefore under voluntary control) does not rule out the possibility that facial behavior also has a genetic, innate component, as proposed by the proponents of the FFH.

A series of cross-cultural investigations tested the proposition that human beings display similar facial expressions regardless of cultural differences (Ekman, 1972, 1994b; Izard, 1994). In each of these studies, representatives from diverse nationalities looked at three photographs, each showing a different facial expression (Ekman, 1972, 1993; Ekman & Friesen, 1971; Ekman, Sorenson, & Friesen, 1969; Izard, 1971, 1980, 1994). From these photographs, participants chose, via a multiple choice format, the photograph they thought best expressed a particular emotion. For example, participants were shown photographs of three faces, one expressing anger, one expressing joy, and one expressing fear. The participants selected the picture they thought showed what a face would look like when the person encountered an injustice or obstacle to a goal (i.e., anger). The research question is whether persons from different cultures would agree on which facial expressions correspond with which emotional experiences. The finding that people from different cultures (different cultures, different languages, different nationalities) match the same facial expressions with the same emotions is evidence that facial behavior is cross-culturally universal (Ekman, 1994b; Ekman & Friesen, 1971; Izard, 1971).³ This is evidence that emotion-related facial behavior has an innate, unlearned component.

To test yourself as the participants in the cross-cultural experiments were tested, take a look at the photographs shown in Figure 12.6. The photographs show four different expressions of a New Guinea native (someone from a different culture than you). Your task is to identify the face that just encountered a contaminated object (i.e., disgust).

Can We Voluntarily Control Our Emotions?

One intriguing question emotion researchers ask is, “Can we voluntarily control our emotions?” (Ekman & Davidson, 1994). Can we voluntarily feel happy or voluntarily not be afraid? The difficulty in providing a definitive answer emerges when you recall that emotions have four aspects: feelings, arousal, purpose, and expression. Emotion’s multidimensional nature begs the question whether feelings, heart rate and physiological states, motivational desires, and facial expressions are controllable. In trying to answer the more general question, however, some emotions clearly just happen to us, and we therefore cannot be held responsible for the involuntary feelings, physiology, desires, and behaviors that ensue (Ekman, 1992, 1994a).⁴ On the other hand, we all have difficulty conjuring up some emotions at will—courage, love, optimism, interest, and so on. It

³Research with infants supports the idea that facial behavior has a strong innate component (Izard et al., 1980) because presocialized infants show distinct, identifiable facial expressions. Blind children, who lack opportunity to learn facial expressions from others through modeling and imitation, show the same recognizable facial expressions as do children of the same age who can see (Goodenough, 1932). Severely mentally handicapped children, who have difficulty learning new motor behaviors, also show full expressions of the emotions (Eibl-Eibesfeldt, 1971).

⁴Daily experience confirms that we can voluntarily regulate emotions once they happen to us, at least to some extent. Intentionally, we mask and hide our fear before sky diving, and we suppress our boredom while listening to another person’s conversation. Because we can regulate our emotions, through inhibition mostly (Levenson, 1994a), we are therefore somewhat responsible for our emotionality (e.g., how angry or sad we get and how

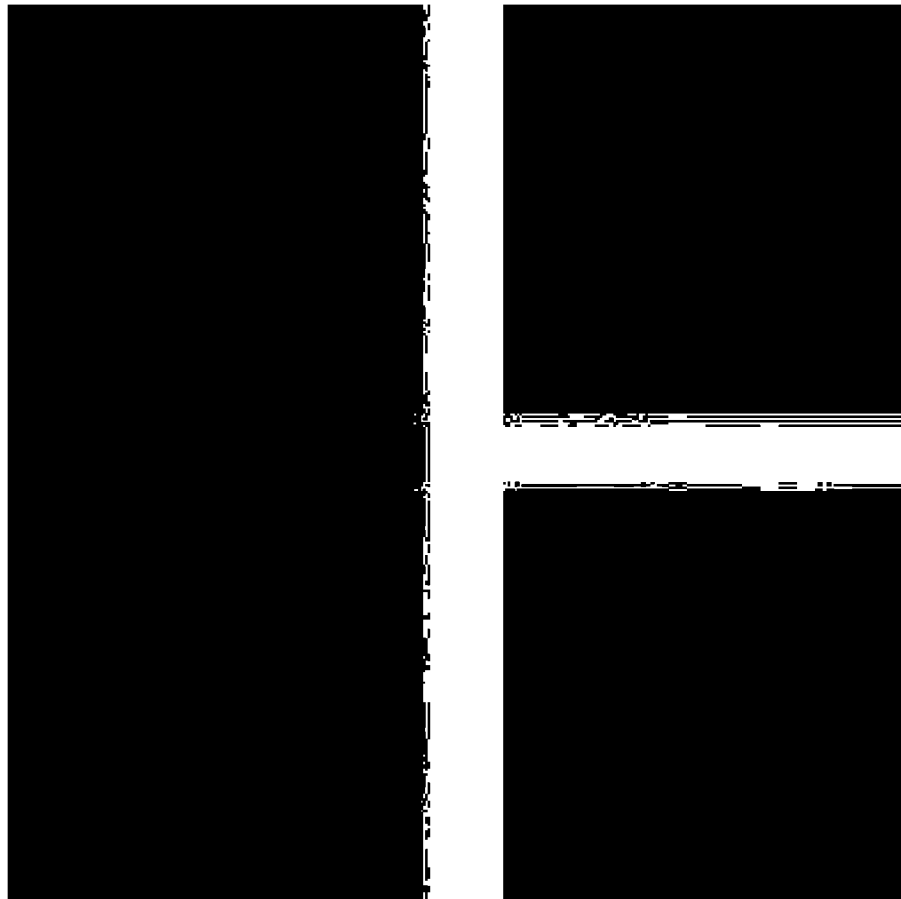


Figure 12.6 Which Facial Expression Shows Disgust? The photograph of the New Guinea native expressing disgust appears in the lower-right corner. Clockwise from the bottom-left are expressions of anger, joy, and distress

is very difficult to just say, “Okay, I’m now going to feel joy.” Instead, you need an exposure to an emotion-generating event capable of conjuring up that specific emotional state. Emotions are largely reactions, and you need some event to react to before conjuring up an emotion.

If emotions are largely biological phenomena that are governed by subcortical structures and pathways, then it makes sense that much of an emotion will escape our voluntary control. If, however, emotions are largely cognitive phenomena that are governed by thoughts, beliefs, and ways of thinking, it makes sense that a good deal of emotional experience can nevertheless be voluntarily controlled, at least to the point that we can voluntarily control our thoughts, beliefs, and ways of thinking. Such a perspective introduces a discussion on the cognitive aspects of emotion.

long we stay that way). Therefore, the initial onset of an emotion is what is so difficult to control. But our capacity for emotional regulation allows us control over the intensity of the rise and fall of our emotions once they happen to us (Ekman, 1992; Levenson, 1994a).

COGNITIVE ASPECTS OF EMOTION

For those who study emotion from a cognitive, social, or cultural point of view, biological events are not necessarily the most important aspects of emotion. Emotions do emerge from biological processes. But they also emerge from information processing, social interaction, and cultural contexts. For instance, a purely biological analysis with a spotlight on subcortical brain circuits, autonomic and endocrine system activity, and facial expressions does not give one an understanding of emotions such as hope, pride, and alienation. “Disappointment” stems not from ANS activity or changes in facial expressions but, instead, from a cognitive, social, and cultural understanding of not having what you hoped you would have (van Dijk, Zeelenberg, & van der Pligt, 1999). The same could be said for “shame” (not having done what was expected of you) and for many other complex (as opposed to basic) emotions.

Appraisal

The central construct in a cognitive understanding of emotion is appraisal (Frijda, 1993; Scherer, Schorr, & Johnstone, 2001; Smith, Haynes, Lazarus, & Pope, 1993). An appraisal is an estimate of the personal significance of an event—is this life event significant? Does this event have implications for my well-being?

All cognitive emotion theorists endorse the following two interrelated beliefs (Frijda, 1986; Lazarus, 1991a; Ortony et al., 1988; Roseman, 1984; Scherer, 1984a; Smith & Ellsworth, 1985; Weiner, 1986) (1) Without an antecedent cognitive appraisal of the event, emotions do not occur and (2) the appraisal, not the event itself, causes the emotion.

Consider a child who sees a man approaching. Immediately and automatically, the child appraises the meaning of the man’s approach as probably “good” or “bad.” The appraisal is based on the salient characteristics of the man approaching (gender, facial expression, pace of approach), expectations of who might be approaching, beliefs of what approaching people typically do, and memories of approaching people in the past. It is not the approaching man per se that explains the quality of the child’s emotional reaction, but rather, it is how the child thinks the approaching man will affect her well-being that gives life to her emotion. If she sees the approaching man smiling and waving and if she remembers the man as being her friend, then she will likely appraise the event as a good one. If she sees the approaching man ranting and raving and if she remembers the man as being the neighborhood bully, then she will likely appraise the event as a bad one. These appraisals cause her to experience emotion (and physiological bodily changes as well). If the child did not appraise the personal relevance of the approaching man, she would not have had an emotional reaction to the man because events that are irrelevant to well-being do not generate emotions (Lazarus, 1991a; Ortony & Clore, 1989; Ortony et al., 1988).

Appraisals precede and elicit emotions. Situations and outcomes do not cause emotions in the way that the person’s appraisals (interpretations) of those situations and outcomes do. To reinforce this idea, consider the counterintuitive finding that Olympic bronze medallists experience more post-competition happiness than do Olympic silver medallists. For this to be true, the athlete’s appraisal of what might have been is at least as important as what situation actually took place (e.g., “I could have won the gold” vs.

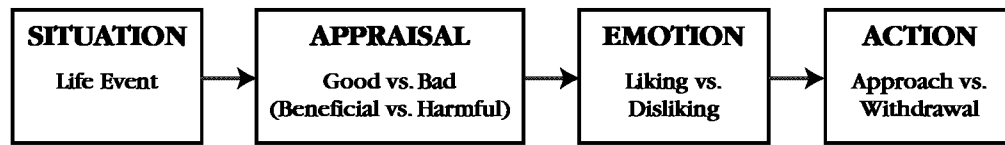


Figure 12.7 Arnold's Appraisal Theory of Emotion

"I could have come up empty") (Medvec, Madey, & Gilovich, 1995). The same sort of cognitive construal also works in emotions such as shame ("If only I weren't...") and guilt ("If only I hadn't...") (Niedenthal, Tangney, & Gavanski, 1994). Emotions follow appraisals. Change the appraisal, and you change the emotion. One of the earliest cognitive theorists was Magda Arnold (1960, 1970). She specified how appraisals, neurophysiology, and arousal work together to produce the experience and expression of emotion by focusing on three questions: (1) How does the perception of an object or event produce a good or bad appraisal; (2) how does the appraisal generate emotion; and (3) how does felt emotion express itself in action? Arnold's ground-breaking appraisal theory of emotion is summarized in Figure 12.7.

From Perception to Appraisal

According to Arnold, people categorically appraise stimulus events and objects as positive or negative. To substantiate her ideas, Arnold paid particularly close attention to the neurological pathways in the brain. In all encounters with the environment, limbic system brain structures (e.g., the amygdala) automatically appraise the hedonic tone of sensory information. For instance, a harsh sound instantaneously is appraised as intrinsically unpleasant (bad), while the smell of a rose is appraised as intrinsically pleasant (good). Recent neuroanatomical research confirms Arnold's claim that the limbic system (and amygdala in particular) is the focal brain center that appraises the emotional significance of sensory stimuli (LeDoux, 1992a, 1992b). In addition, most stimuli are further appraised cortically by adding information processing and hence expectations, memories, beliefs, goals, judgments, and attributions. Full appraisal therefore draws on both subcortical (limbic system) and cortical interpretations and evaluations.

From Appraisal to Emotion

Once an object has been appraised as good or bad (as beneficial or harmful), an experience of liking or disliking follows immediately and automatically. For Arnold, the liking or disliking is the felt emotion.

From Felt Emotion to Action

Liking generates a motivational tendency to approach the emotion-generating object; disliking generates a motivational tendency to avoid it. During appraisal, the individual relies on memory and imagination to generate a number of possible courses of action in dealing with the liked or disliked object. When a particular course of action is decided upon, the hippocampal brain circuit activates the motor cortex, which leads to behavioral action. Contemporary research adds that the limbic system also has direct access to the

muscles that control facial expressions (Holstedge, Kuypers, & Dekker, 1977), autonomic and endocrine system reactions (Kapp, Pascoe, & Bixler, 1984; LeDoux, Iwata, Clicchetti, & Reis, 1988), and general arousal systems (brain stem; Krettek & Price, 1978). Through its effects on these biological systems, emotions produce action.⁵

Complex Appraisal

Like Arnold, Richard Lazarus emphasized the cognitive processes that intervene between important life events (environmental conditions) and physiological and behavioral reactivity. While following Arnold's ideas as a road map, he expanded her general good/bad appraisal into a more complex conceptualization of the appraisal process (Lazarus, 1968, 1991a; Lazarus & Folkman, 1984). As shown below, "good" appraisals were conceptualized into several types of benefit, while "bad" appraisals were differentiated into several types of harm and into several types of threat. Lazarus's (1991a) complex appraisals framework appears in Figure 12.8.

In articulating a more comprehensive view of appraisal, Lazarus pointed out that people evaluate whether the situation they face has personal relevance for their well-being. When well-being is at stake, people then evaluate the potential harm, threat, or benefit they face. For Lazarus (1991a), these appraisals take the form of questions such as: Is this event relevant to my well being? Is this event congruent with my goals? How deeply does this event touch my self-esteem? Given these appraisals of personal relevance, goal congruence, and ego involvement, people appraise situations as particular kinds of harm, as particular kinds of threat, or as particular kinds of benefit (see Lazarus, 1991a, 1994).

The appraisal process does not end with an assessment of personal relevance, goal congruence, and ego involvement. Perceived coping abilities continue to alter how people interpret (appraise) the situations they face (Folkman & Lazarus, 1990; Lazarus, 1991a, 1991b). The person asks him- or herself, can I cope with the potential benefit, threat, or harm I face? Can I bring the benefit to fruition, and can I prevent the harm or threat? Anticipated coping changes the way a situation is appraised (if I can cope with the threat, then it is not really much of a threat). A changed appraisal leads to a changed emotion. Overall then people first appraise their relationship to the life event ("primary appraisal") and then appraise their coping potential within that event ("secondary appraisal").

Primary Appraisal

Primary appraisal involves an estimate of whether one has anything at stake in the encounter (Folkman, Lazarus, Dunkel-Schetter, DeLongin, & Gruen, 1986). The following are potentially at stake in primary appraisal: (1) health, (2) self-esteem, (3) a goal, (4) financial state, (5) respect, and (6) the well-being of a loved one. In other words, primary appraisals ask whether one's physical or psychological well-being, goals and financial status, or interpersonal relationships are at stake during a particular encounter.

⁵One important feature of Arnold's theory is that emotion is defined in terms of motivation. The tendency to approach or avoid gives the emotion a directional force, while the physiological changes in the muscles and viscera give emotion its energy. A second important feature of Arnold's theory treats emotion as a unitary construct, as she preferred to talk about emotion forces of approach and avoidance, of attraction and repulsion, and of liking and disliking more than she did of specific emotions such as anger, sadness, or pride.

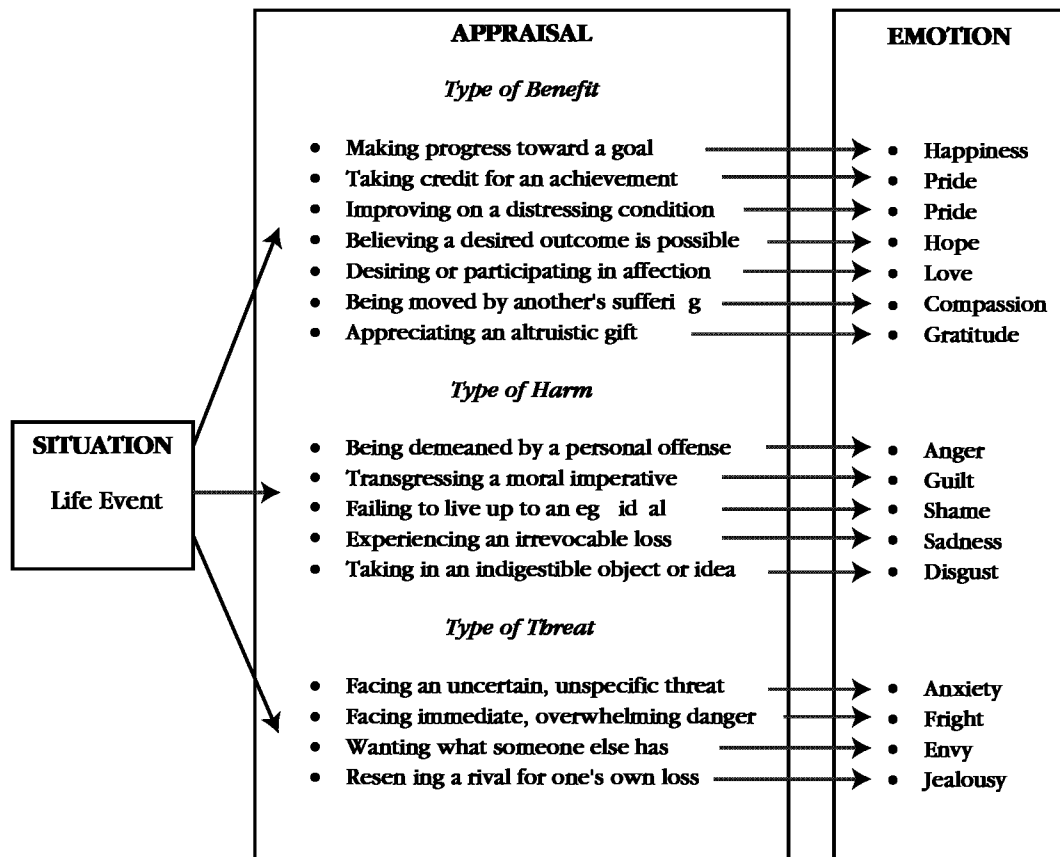


Figure 12.8 Lazarus's Complex Appraisals: Types of Benefit, Harm, and Threat

As soon as one of these six outcomes is at stake, an "ordinary life event" becomes an emotion-generating "significant life event." For instance, when driving a car and it swerves on ice, the cognitive system immediately generates the primary appraisal that much is now at stake—personal health, reputation as a skillful driver, a valuable possession (the car), and the physical and psychological well-being of one's passenger.

Secondary Appraisal

Secondary appraisal, which occurs after some reflection, involves the person's assessment for coping with the possible benefit, harm, or threat (Folkman & Lazarus, 1990). Coping involves the person's cognitive, emotional, and behavioral efforts to manage the benefit, harm, or threat. For instance, imagine the coping options for a musician scheduled to perform for an audience. The musician might solicit advice from a mentor, practice throughout the night, find a means of escape, make a plan of action and follow through, copy another musician's style, joke and make light of the event's significance, and so forth. The musician's emotional experience will depend not only on his initial appraisal of the potential benefit, harm, or threat within the evening's performance, but also on his reflection on the potential efficacy of his coping strategies to realize the benefit or prevent the harm or threat.

Appraisal Model of Emotion

Lazarus's full emotion model appears in Figure 12.9. Given an encounter with the environment—a life event—the individual first makes a primary appraisal pertaining to the event's relevance and personal significance. If the event is not foreseen as a potential benefit, harm, or threat, then it is perceived to be irrelevant to well-being. Hence, no autonomic nervous system (ANS) hyperactivity occurs. The lack of an ANS discharge signals that no coping is required for this particular life event. Benign events fail to generate an emotional episode. If the life event is perceived to be either a potential benefit, a potential harm, or a potential threat, then a specific emotion is activated (see Figure 12.8) and ANS hyperactivity occurs to help the person prepare to adapt to the important life event (Tomaka, Blascovich, Kelsey, & Leitten, 1993). ANS activation readies the individual to engage in approach or avoidance behavior, and it also activates or prompts secondary appraisal, as the individual considers the extent to which he or she can cope successfully with the life event. ANS activation cues up the need for secondary appraisal. If the individual's approach and avoidance coping efforts are successful, then ANS hyperactivity begins to calm and the emotion-generating event loses its status as an emotional episode because the benefit is realized or the threat or harm dissipates. If coping responses are unsuccessful, however, then ANS hyperactivity continues at a high level and the person experiences stress and anxiety because the benefit slips away or the threat or harm occurs.

Motivation

Lazarus's portrayal of emotion is a motivational one. A person brings personal motives (goals, well-being) into a situation. When personal motives are at stake, emotions follow. Furthermore, emotions constantly change as primary and secondary appraisals change. The whole emotion process is characterized not so much by the linear sequence of life event → appraisal → emotion as it is by the ongoing change in the status of one's personal motives. Life events offer potential benefits, harms, and threats to well-being, and ongoing coping efforts have important implications for the extent to which those benefits, harms, and threats are realized. So, the individual's personal motives (goals, well-being) lie at the core of the emotion process and the individual continually makes primary and secondary appraisals about the status of those personal motives as events unfold and coping efforts are implemented.

Lazarus labels his emotion theory as a cognitive–motivational–relational one (Lazarus, 1991b). *Cognitive* communicates the importance of appraisal, *motivational* communicates the importance of personal goals and well-being, and *relational* communicates that emotions arise from one's relationship to environmental threats, harms, and benefits.

Appraisal Process

Following the work of Arnold and Lazarus, cognition-minded theorists continued to develop an increasingly sophisticated understanding of the appraisal process (de Rivera, 1977; Frijda, 1986; Johnson-Laird & Oatley, 1989; Oatley & Johnson-Laird, 1987; Ortony, Clore, & Collins, 1988; Roseman, 1984, 1991; Scherer, 1984a, 1997; Smith

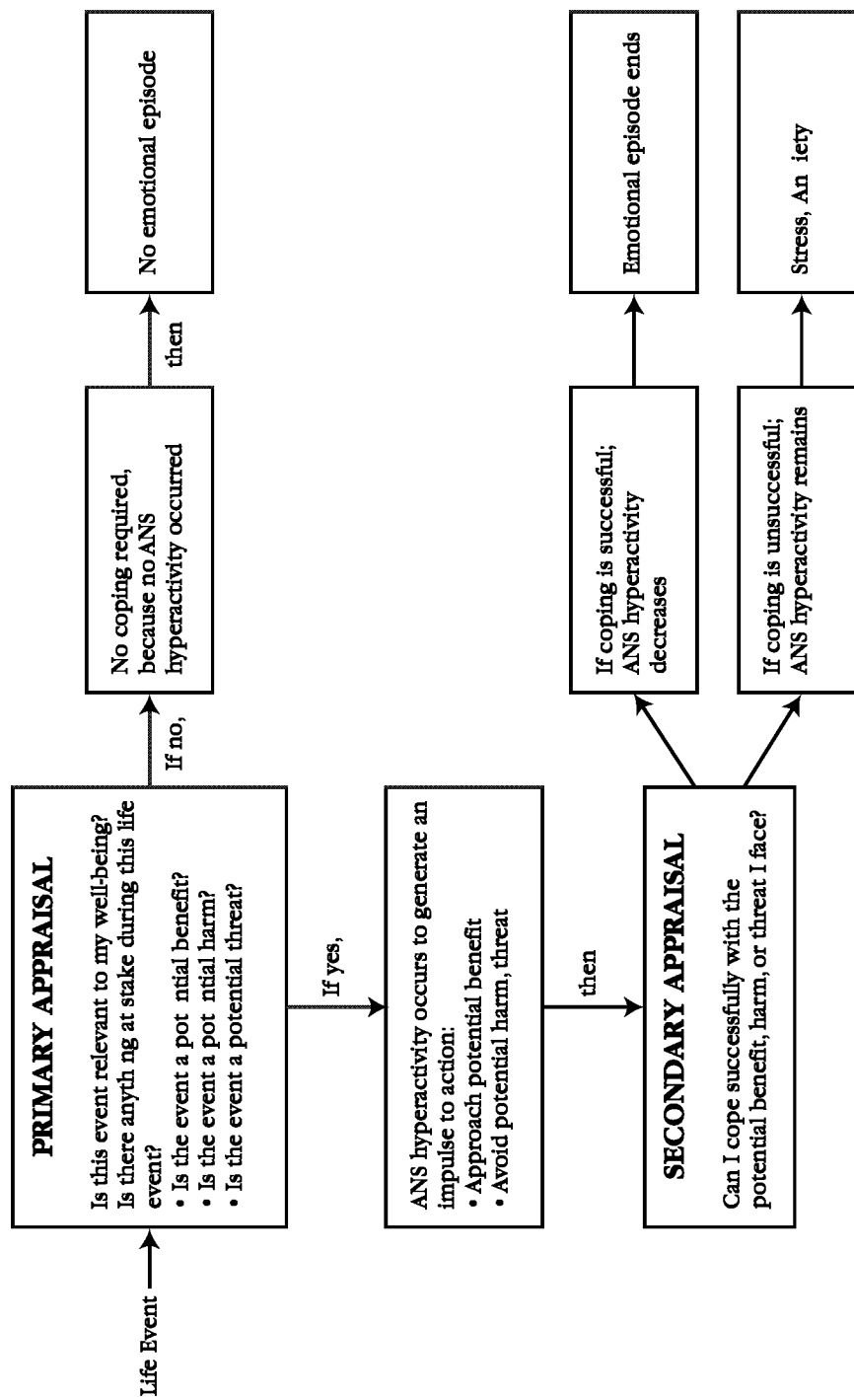


Figure 12.9 Lazarus's Conceptualization of Emotion as a Process

& Ellsworth, 1985; Weiner, 1986). Each theorist embraces the life event → appraisal → emotion sequence, but they differ on how many dimensions of appraisal are necessary for explaining emotional experience. Arnold used appraisal to explain two emotions (like and dislike), Lazarus's primary and secondary appraisals explain approximately 15 emotions (see Figure 12.8), yet cognitive emotion theorists ultimately seek to use appraisals to explain *all* emotions.

These cognitive theorists believe each emotion can be described by a unique pattern of compound appraisals. A compound appraisal consists of interpreting multiple meanings within an environmental event, such that an event might be both pleasant and caused by the self (hence, pride). Eventually, if one knew the full pattern of the person's appraisals, then it would be a rather straightforward task to predict which ensuing emotion the person would experience.

To explain the full complexity of emotions, theorists have argued for the importance of both (1) compound appraisals and (2) additional dimensions of appraisal. Dimensions of appraisal begin with Arnold's pleasant-unpleasant appraisal and also Lazarus's personal significance and coping potential (primary and secondary appraisals). But a more comprehensive list of appraisals might further add appraisals of the event's unexpectedness and its compatibility with internalized standards (Scherer, 1997). Other appraisals might include the event's certainty, its legitimacy, and one's anticipated effort required (Smith & Ellsworth, 1985). It is difficult to say how many dimensions of appraisal exist or which appraisals are most fundamental and which are of only a peripheral importance. The following list of additional appraisals, however, represents the thinking of most cognition-minded emotion theorists (these dimensions are a combination of those proposed by Roseman, 1984, 1991; Scherer, 1984a, 1997; Smith & Ellsworth, 1985):

Arnold's Appraisal:

Pleasantness	Is the event good or bad?
--------------	---------------------------

Lazarus's Appraisals:

Personal relevance	Is the event relevant to personal well-being?
Coping ability	Can I cope successfully with the event?

Other Possible Appraisals:

Expectancy	Did I expect the event to happen?
Responsibility	Who caused the event—self? others? circumstances?
Legitimacy	Is what happened fair? Is it deserved?
Compatibility with the standards of self, society	Is this event okay on a moral level?

Consider how a combination of several different appraisals can produce one specific emotion. Anger, for instance, is a combination of the following four appraisals: (1) a valued goal is at stake (personal relevance); (2) the goal was lost (unpleasantness); (3) someone blocked my goal attainment (irresponsibility); and (4) the loss was undeserved (illegitimacy). That is, personal relevance + unpleasantness + irresponsibility + illegitimacy = anger. For a second example, "sentimentality" is a function of the following appraisals: personal relevance, high coping potential, expectancy, pleasantness, and compatibility with standards. Change any one of these appraisals, however, and the

experienced emotion will also change. That is, change high coping ability to low coping ability (while keeping the other four appraisals constant) and “sentimentality” changes to “longing.”

The ultimate goal of the appraisal emotion theorists is perhaps now apparent. They are hard at work to construct a decision tree in which all possible patterns of appraisal lead to a single emotion (Scherer, 1993, 1997). That is, if the person makes appraisals X, Y, and Z, then emotion A will surely and inevitably follow.

Emotion Differentiation

The strong suit of an appraisal theory of emotion is its ability to explain emotion differentiation processes (e.g., how people experience different emotions to the same event). Figure 12.10 depicts one possible decision tree to show how six appraisal dimensions can differentiate among 17 different emotions (Roseman, Antoniou, & Jose, 1996). The appraisal dimensions are shown on the border of the figure, while the differentiated emotions appear in the boxes inside the figure. The appraisal dimensions on the left side of

		Positive Emotions		Negative Emotions		
		Motive-Consistent		Motive-Inconsistent		
		Appetitive	Aversive	Appetitive	Aversive	
Circumstance-Caused	Unexpected	Surprise				
	Uncertain	Hope		Fear		Low Control Potential
	Certain	Joy	Relief	Sadness	Distress	
	Uncertain	Hope		Frustration	Disgust	High Control Potential
Certain	Joy	Relief				
Other-Caused	Uncertain	Liking		Dislike		Low Control Potential
	Certain					
	Uncertain			Anger	Contempt	High Control Potential
	Certain					
Self-Caused	Uncertain	Pride		Regret		Low Control Potential
	Certain					
	Uncertain			Guilt	Shame	High Control Potential
	Certain					
				Noncharacterological	Characterological	

Figure 12.10 Decision Tree of Six Dimensions of Appraisal to Differentiate Among 17 Emotions

Source: From “Appraisal Determinants of Emotions: Constructing a More Accurate and Comprehensive Theory,” by I. J. Roseman, A. A. Antoniou, and P. E. Jose, 1996, *Cognition and Emotion*, 10, pp. 241–277. Reprinted by permission of Psychology Press, Ltd.

the figure are responsibility (circumstance-caused, other-caused, self-caused), expectancy (unexpected), and certainty (uncertain, certain). The appraisal dimensions on the top of the figure are goal/need at stake (motive-consistent, motive-inconsistent) and pleasantness (appetitive, aversive). The appraisal dimension on the right side of the figure is coping ability (low vs. high). And the appraisal dimension on the bottom is source of the aversive event (noncharacterological, characterological). Admittedly, the figure can be difficult to follow, but it does get one point across rather well—namely, that in an emotional episode, people engage in a good deal of cognitive appraisal to interpret what is happening to them and as any of these interpretations (appraisals) change so does the person's emotional experience.

An appraisal decision tree such as the one depicted in Figure 12.10 will never predict ensuing emotions correctly 100% of the time (Oatley & Duncan, 1994). Appraisal theorists generally agree that knowing a person's particular configuration of appraisal allows them about a 65–70% accuracy rate in predicting people's emotions (Reisenzein & Hofman, 1993). Five reasons explain why appraisal theory cannot explain emotional reactions with 100% accuracy (Berkowitz & Harmon-Jones, 2004; Fischer, Shaver, & Carnochan, 1990; Reisenzein & Hofman, 1993; Scherer, 1997):

1. Processes other than appraisal contribute to emotion (as discussed in the first half of this chapter).
2. Appraisals often function to intensify (rather than cause) the emotion (e.g., low coping potential intensifies, but does not cause, anger).
3. While each specific emotion has a unique pattern of appraisals associated with it, the patterns of appraisals for many emotions overlap and create some confusion (e.g., guilt and shame have similar patterns of appraisal).
4. Developmental differences exist among people such that children generally experience basic, general emotions (e.g., joy), whereas socialized adults generally experience a richer variety of appraisal-specific emotions (e.g., pride, relief, gratitude).
5. Emotion knowledge and attributions (the next two topics in this chapter) represent additional cognitive factors beyond appraisal that affect emotion.

Emotion Knowledge

Infants and young children understand and distinguish between only a few basic emotions. They learn to name the few basic emotions of anger, fear, sadness, joy, and love (Kemper, 1987; Shaver et al., 1987). As people gain experience with different situations, they learn to discriminate shades within a single emotion. The shades of joy, for instance, include happiness, relief, optimism, pride, contentment, and gratitude (Ellsworth & Smith, 1988b). The shades of anger include fury, hostility, vengefulness, rage, aggravation, and wrath (Russell & Fehr, 1994). These distinctions are stored cognitively in hierarchies of basic emotions and their derivatives. Thus, the number of different emotions any one person can distinguish constitutes her *emotion knowledge* (Shaver et al., 1987). Through experience, we construct a mental representation of the different emotions and how each individual emotion relates to other emotions and to the situations that produce them.

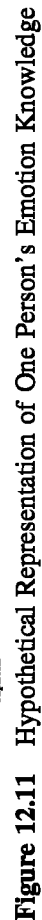
One person's hypothetical (computer-generated) emotion knowledge appears in Figure 12.11. One level at the top of the figure includes basic emotion categories—love, joy, surprise, anger, sadness, and fear. For this person, these are his or her six basic emotions (or emotion families). With experience, the individual learns shades of these basic emotions (listed on the lower part of the figure). For instance, the individual depicted in the figure understands three shades of love—affection, lust, and longing—and six shades of sadness—suffering, depression, disappointment, shame, neglect, and sympathy. The asterisk in each column of emotion words denotes the prototype within the shades of that emotion.

Much of the diversity of emotion experience comes from learning fine distinctions among emotions and the specific situations that cause them. Appraisal theorists believe that there are as many emotions as there are cognitive appraisal possibilities of a situation (Ellsworth & Smith, 1988a; Smith & Ellsworth, 1985, 1987). For example, an individual who has just lost out to a rival might potentially experience distress, anger, fear, disgust, and jealousy (Hupka, 1984). One learns that these emotions can coincide and are therefore related to one another (as in the jealousy complex; Hupka, 1984; White, 1981). One also learns that other emotions (e.g., love, joy) are far removed from this cluster of emotional experience. Finally, one learns the differences between shades of anger—the differences among jealousy, hate, irritation, and so on. Eventually, a lifetime of such learning produces a highly personal emotion knowledge. It is this reservoir of emotion knowledge that enables the individual to appraise situations with high discrimination and therefore to respond with situationally appropriate emotions (rather than with general ones). Hence, the finer and more sophisticated one's emotion knowledge is, the greater his or her capacity to respond to each life event with a specialized and highly appropriate emotional reaction.

Attributions

Attribution theory rests on the assumption that people very much want to explain why they experienced a particular life outcome (Heider, 1958; Jones & Davis, 1965; Kelley, 1967, 1973; Weiner, 1980, 1985, 1986). Following an outcome, we ask: Why did I fail that chemistry examination? Why did the Yankees win the World Series? Why did Suzy drop out of school? Why is this person rich while that person is poor? Why didn't I get that job? Why didn't Frank return my telephone call?

An attribution is the reason the person uses to explain an important life outcome (Weiner, 1985, 1986). It is the causal explanation to answer why an outcome occurred. For instance, if we answer the question, "Why did I fail that chemistry test?" by saying, "because I didn't study for it," then "low effort" is the attribution to explain the failure. Attributions are important because the explanation we use to explain our outcome generates emotional reactions. Following positive outcomes, people generally feel happy, and following negative outcomes, people generally feel sad or frustrated. In his attributional theory of emotion, Bernard Weiner (1985, 1986) refers to the outcome-dependent emotional reaction as a "primary appraisal of the outcome." Basic emotions of happy and sad simply follow good and bad outcomes (Weiner, Russell, & Learman, 1978, 1979). Attribution theory proposes that in addition to these primary, outcome-generated emotional reactions, people further explain why they succeeded or failed. Once the outcome



Association. Adapted with permission.

has been explained, new emotions surface to differentiate the general happy–sad initial emotional reaction into specific secondary emotions. The attribution of why the outcome occurred constitutes the “secondary appraisal of the outcome.” The sequence of events in Weiner’s attribution theory of emotion appears in Figure 12.12.

As depicted in Figure 12.12, seven emotions occur in reliable ways as a function of the attributional information-processing flow (Weiner, 1985, 1986; Weiner & Graham, 1989). The attributional roots to the seven emotions are as follows:

Pride	Attributing a positive outcome to an internal cause. “I succeeded because of my outstanding ability.”
Gratitude	Attributing a positive outcome to an external cause. “I succeeded because of help from my teammates.”
Hope	Attributing a positive outcome to a stable cause. “I do well in sports because I am athletic by nature.”
Anger	Attributing a negative outcome to an external-controllable cause. “I lost because my opponent cheated.”
Pity (Sympathy)	Attributing a negative outcome to an external-uncontrollable cause. “I lost my job because of the poor economy.”
Guilt	Attributing a negative outcome to an internal-controllable cause. “I lost because I didn’t put forth much effort.”
Shame	Attributing a negative outcome to an internal-uncontrollable cause. “I was rejected because I am ugly.”

Notice that in each of these seven emotions (three positive, four negative), the attributional analysis of why the outcome came to pass is causally prior to the specific emotion. For instance, the fundamental assertion of an attributional analysis of emotion is that if the attribution was to change, then the emotion would change as well (i.e., change the attribution and you change the emotion). If a student feels pride because she feels her ability won her a scholarship and if the student then learns that the real reason she won the scholarship was because of someone’s strong support of her application during a meeting, then the experienced emotion flows from pride into gratitude. The outcome is the same (she won the scholarship), but when the attribution changed so did the emotional reaction.

Appraisal theorists begin their analysis with relatively simple appraisals, such as whether an event signifies harm, threat, or danger (Lazarus, 1991a). They continue with progressively more complex appraisals, such as legitimacy (Ellsworth & Smith, 1988a). Cognitive theorists then add emotion knowledge to explain further how people make fine-tuned appraisals. In his attributional analysis, Bernard Weiner (1982, 1986) adds yet one more type of appraisal to help explain emotional processes—the post-outcome appraisal of why the outcome occurred. Thus, the role of cognition is not only to appraise the meaning of the life event (appraisal) but also to appraise why the life outcome turned out the way it did (attribution). When taken as a whole, pre-outcome appraisals such as potential benefit, harm, and threat explain some emotional processes, as do post-outcome

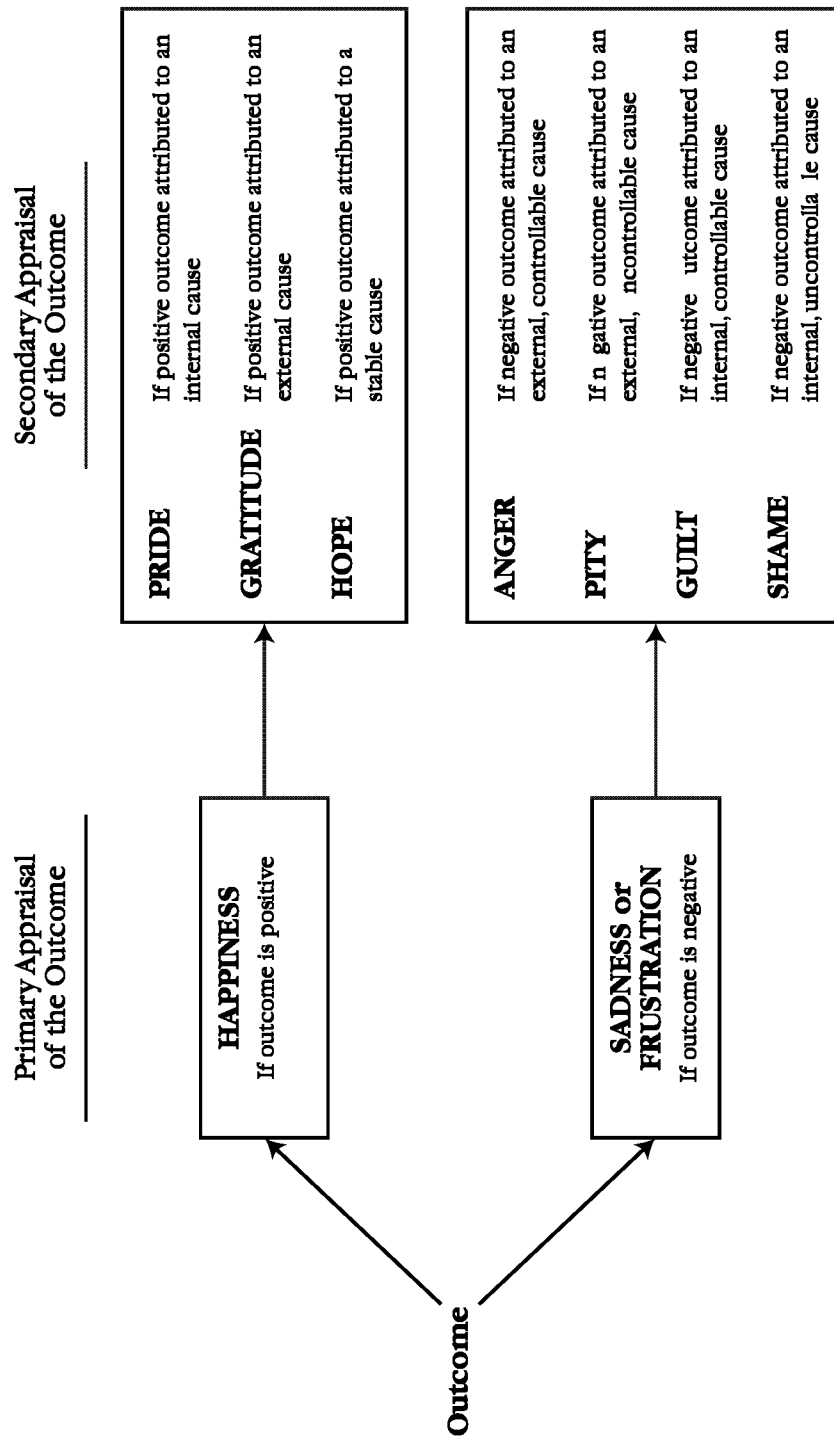


Figure 12.12 Attribution Theory of Emotion

appraisals (attributions) that explain additional emotional processes and outcomes (Leon & Hernandez, 1998).

SOCIAL AND CULTURAL ASPECTS OF EMOTION

As appraisal contributes to a cognitive understanding of emotion, social interaction contributes to a social understanding of emotion. In addition, the sociocultural context one lives in contributes to a cultural understanding of emotion. Social psychologists, sociologists, anthropologists, and others argue that emotion is not necessarily a private, biological, intrapsychic phenomenon. Instead, they contend that many emotions originate within both social interaction and a cultural context (Averill, 1980, 1983; Kemper, 1987; Manstead, 1991).

Those who study the cultural construction of emotion point out that if you changed the culture you lived in, then your emotional repertoire would also change (Mascolo, Fischer, & Li, 2003). Consider, for instance, the emotional repertoire of people in the United States and China. Chinese infants are less emotionally reactive and expressive than are American infants, probably because Chinese parents emphasize and expect emotional restraint whereas American parents emphasize and expect emotional expression.

In the same spirit, Figure 12.13 graphically illustrates the similar and dissimilar basic emotions for people from both cultures. The solid lines to anger, sadness, fear, and happiness illustrate that members of both cultures see essentially the same meaning within these emotional experiences. The dashed lines to shame and love illustrate that members

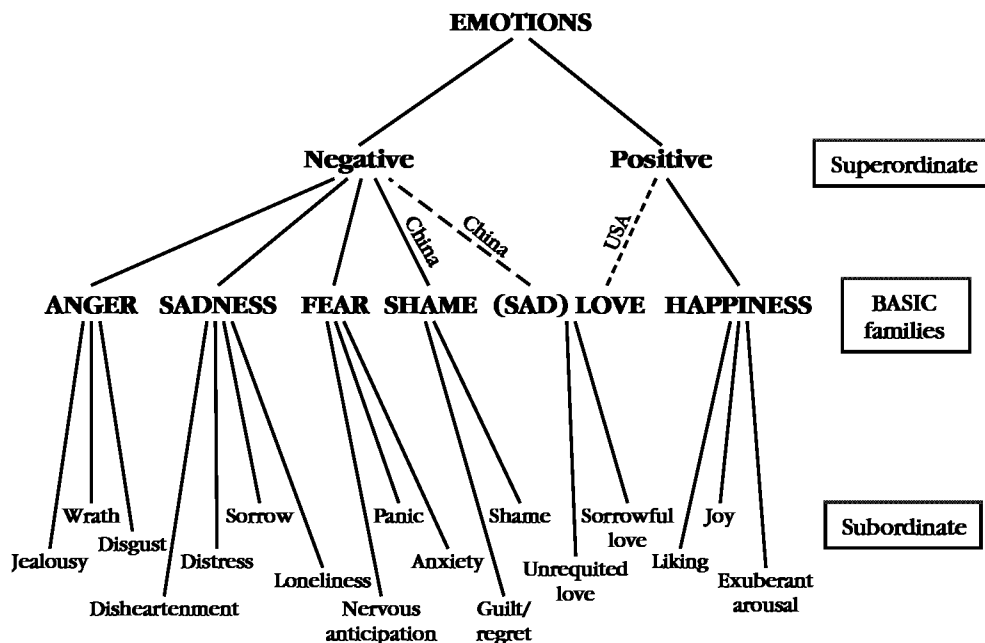


Figure 12.13 Cluster Analysis of Basic Emotion Families in Chinese and English

Source: From Cross-cultural similarities and differences in emotion and its representation: A prototype approach, by P. R. Shaver, S. Wu, & J. C. Schwartz, 1992, in M. S. Clark (Ed.), *Review of Personality and Social Psychology*, Volume 13, pp 231–251. Thousand Oaks, CA: Sage.

from the two cultures see different meanings within these emotions. For Chinese, love is not a positive emotion. The meaning of love is much closer to “sad love,” and it is considered to be a negative emotion. For people in China, shame is considered to be a basic emotion. Thus, people in the United States find meaning in two positive emotions and three negative emotions, whereas people in China find meaning in one positive emotion and five negative emotions. (The 17 subordinate emotions—jealousy, wrath, disgust, etc.—are from the Chinese participants, not from the American participants.)

If you are an English-speaking reader and are surprised that Chinese-speaking participants understand love (“sad love”) as a negative emotion, the point helps illustrate the cultural basis of emotion. In traditional Chinese culture, parents arrange their children’s marriages. Marriages function as the joining of two extended families, in addition to the joining of two people. When one anticipates an arranged marriage, romantic love takes on meaning as a potentially disruptive force that can separate a son or daughter from his or her parents (Potter, 1988). If embraced, romantic love therefore has the potential to break down the proper respect and deference that sons and daughters are expected to show their parents (Russell & Yik, 1996). The experience of romantic love therefore takes on a negative valence and is better represented by the experience of “sad love.”

Those who study the social construction of emotion point out that if you changed the situation you were in, then your emotions would also change. Think about the typical emotions experienced at a playground, at work, at a weekend party, at a sporting event, cleaning the bathroom, during a fistfight, and so on. Situations define what emotions are most appropriate and expected, and because people know which emotions are likely to occur in which settings, they can select a setting and therefore “construct” a particular emotional experience for themselves. If you want to construct joy, for example, you go to a weekend party; if you want to construct disgust, you clean the shower. Also, think about the typical emotions experienced while interacting with someone with superior status (boss, parent), with someone of equal status (friend, spouse), or with someone of inferior status (child, new employee). Status differences between interactants define what emotions are appropriate and expected, and because people know which emotions go with which interactants, they can select interaction partners and therefore “construct” a particular emotional experience. Thus, by strategically selecting which situations to be in and by strategically selecting which people to interact with, each of us has the means to socially construct which emotions we will most likely experience.

Social Interaction

Other people are typically our most frequent source of day-to-day emotion (Oatley & Duncan, 1994). We experience a greater number of emotions when interacting with others than when we are alone.

If you kept track of which events and experiences caused your emotional reactions—another person’s action, an action of your own, something you read or saw—you would likely discover that interactions with others triggered most of your emotions (Oatley & Duncan, 1994). Emotions are intrinsic to interpersonal relationships. They also play a central role in creating, maintaining, and dissolving interpersonal relationships, as emotions draw us together and emotions push us apart (Levenson,

Carstensen, & Gottman, 1994; Levenson & Gottman, 1983). For instance, joy, sadness, and anger all work to affect the social fabric of relationships. Joy promotes the establishment of relationships. Sadness maintains relationships in times of separation (by motivating reunion). And anger motivates the action necessary to break off injurious relationships.

Other people not only cause emotions to stir in us, but they also affect us indirectly, as through *emotional contagion*. Emotional contagion is “the tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person and, consequently, to converge emotionally” (Hatfield, Cacioppo, & Rapson, 1993a). The three propositions of mimicry, feedback, and contagion explain how, during social interaction, the emotions of others create emotions in us (Hatfield, Cacioppo, & Rapson, 1993b):

- Mimicry: “In conversation, people automatically mimic and synchronize their movements with the facial expressions, voices, postures, movements, and instrumental behaviors of other people.”
- Feedback: “Emotional experience is affected, moment to moment, by the activation of and feedback from facial, vocal, postural, and movement mimicry.”
- Contagion: “Consequently, people tend to ‘catch’ other people’s emotions.”

As we are exposed to the emotional expressions of others, we tend to mimic their facial expressions (Dimberg, 1982; Strayer, 1993), speech style (Hatfield, Hsee, Costello, Weisman, & Denney, 1995), and posture (Bernieri & Rosenthal, 1991). Once mimicry occurs, the facial feedback hypothesis illustrates how mimicry (of not only the face, but also voice and posture) can affect the observer’s emotional experience, and hence lead to a contagion effect.

During social interaction, we not only expose ourselves to emotional contagion effects, but we also put ourselves into a conversational context that provides an opportunity to reexperience and relive past emotional experiences, a process referred to as “the social sharing of emotion” (Rimé, Mesquita, Philippot, & Boca, 1991). Social sharing of emotional conversations usually take place later in the day and when in the company of intimates (close friend, love partner, teammates). When people share their emotions, they typically do so by recounting the full account of what happened during the emotional episode, what it meant, and how the person felt throughout (Rimé et al., 1991). During such social sharing of emotion, an empathic listener can offer support or assistance, strengthen coping responses, help make sense of the emotional experience, and reconfirm the self-concept (Lehman, Ellard, & Wortman, 1986; Thoits, 1984). It is in these times of sharing our emotions that we build and maintain the relationships that are central to our lives (Edwards, Manstead, & MacDonald, 1984), such as marital relationships (Noller, 1984).

Emotional Socialization

Emotional socialization occurs as adults tell children what they ought to know about emotion. Emotional socialization occurs among adults as well, but the process is best illustrated when adults interact with children for the explicit purpose of teaching socialization information (Pollak & Thoits, 1989). Adults tell children about the situations that

cause emotions, about how emotion expresses itself, and about emotion words or labels for their feelings and behaviors. In turn, children learn that a basic emotion can be differentiated into specific emotions (emotion knowledge; Shaver et al., 1987), that certain expressive displays should be controlled (expression management; Saarni, 1979), and that negative emotions can be manipulated deliberately into neutral or positive emotions (emotion control; McCoy & Masters, 1985). When children learn from adults about emotions, most of what they learn falls under the rubrics of emotion knowledge, expression management, and emotion control.

Consider the socialization that occurs in settings such as day care centers, preschools, and elementary schools (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Pollak & Thoits, 1989). During a child's emotional episode, a caretaker or teacher might explain the child's feelings, point out the causes of an emotion, and instruct the child about which expressive displays are most appropriate and welcomed and which other expressive displays are not.

Consider an example of emotion knowledge—how adults tell children about the causes of emotion (Pollak & Thoits, 1989):

GIRL (several times): My mom is late.
 STAFF MEMBER: Does that make you mad?
 GIRL: Yes.
 STAFF MEMBER: Sometimes kids get mad when their moms are late to pick them up.

Consider an example of expression management—how adults tell children to express their emotions (Pollak & Thoits, 1989):

STAFF MEMBER: Robert, I see you're very angry.
 (While holding a kicking,
 screaming boy in time-out)

Consider an example of emotion control—how adults teach children to control their emotional displays (Pollak & Thoits, 1989):

During circle time, Alec tried to climb all over John, a volunteer.
 JOHN: If you want to be close, there are some things you could do. . . . You could sit next to me and we could hold hands, or I could put my arm around you, or you could sit on my lap.

Different societies socialize their children's emotions in different ways. Consider, for instance, the different socialization messages communicated by parents of a child in the United States (upper quote) and communicated by parents of a child in China (lower quote):

Three-year-old Danny and his mother are putting together the pieces of a puzzle. Danny places a piece in its correct location. Immediately, he looks up to his mother, smiles, and says, "Oh! I did it!" Looking up from her work, his mother smiles and says, "You did it!" Danny claps his hands, after which his mother applauds and says, "That's great!"

Mother asks 3-year-old Lin to sing a song for guests. After she finishes, with smiles and exaggerated expressions, the guests say, "Wonderful! You sing nicer than my child!" Mother replies,

"Haihao, she is O.K. Her voice is kind of off the tune, though. But she likes to sing." To Lin, "You did all right, but now you need more practice. Play down your success!" (Mascolo et al., 2003, p. 375)

This pair of quotes depict the different ways in which socialization agents react to children's accomplishments. As these quotes suggest, parents of children in the United States tend to praise their children's accomplishments and encourage positive self-expression. Parents of children in China tend to make effacing remarks to others about their children's efforts. Guests, relatives, and others, however, generally lavish praise on the child, even as they efface their own children. Years of such socialization lead American children to take pride in their accomplishments, and years of such socialization lead Chinese children to harmonize the self with others through self-effacement (Chen, 1993; Stipek, 1999).⁶

On a larger scale, cultures offer children storybooks, and U.S. preschoolers prefer exciting stories whereas Chinese preschoolers prefer calm stories. Furthermore this exposure to exciting storybooks is part of what leads U.S. children to prefer exciting affect as ideal while exposure to calm storybooks is part of what leads Chinese children to prefer calm affect as ideal (Tsai, Louie, Chen, & Uchida, 2007).

Managing Emotions

How people learn to manage their emotions can be seen in professionals who interact frequently, closely, and intimately with the public, such as airline flight attendants (Hochschild, 1983), hairstylists (Parkinson, 1991), and physicians (Smith & Kleinman, 1989). In these fields, socialization pressures to manage one's emotions mostly revolve around a theme of coping with aversive feelings in ways that are both socially desirable and personally adaptive (Saarni, 1997). Physicians, for instance, are not supposed to feel either attraction or disgust for their patients, irrespective of how beautiful or revolting their appearance might be. Therefore, during their medical school training, physicians must learn a feigned neutrality, a detached concern for their patients.

Imagine being a medical student asked to conduct pelvic, rectal, and breast examinations and perform surgery, dissections, and autopsies. Such situations are clearly emotion-generating life events, but physicians need to learn a professional affective neutrality—even when blood is spewing out an artery or they reach their hands into patient's intestines. How physicians learn such affective neutrality provides insight into how the rest of us learn to manage our emotions too.

For 2 years, researchers observed and interviewed medical students to identify the emotion-management strategies they learned during medical school to achieve affective

⁶Societies clearly socialize their members' emotional experiences and expressions. Still, limits exist as to how much a culture can socialize particular emotions into its constituents. Consider the claim that in some cultures people exchange romantic partners without jealousy. Biology-minded theorists argue that sharing a sexual partner would surely produce jealousy, and appraisal theorists might make a similar argument (see Table 12.2). But can people be socialized to not experience jealousy during the exchange of romantic partners? The short answer is, basically, no (Reis, 1986). Cultures *do* vary as to which behaviors signal jealousy, which signs of affection justify jealousy, and how people express jealousy, but the emotional angst of sexual jealousy occurs in all cultures (Reis, 1986). Like many other basic emotions, jealousy is universal, though many of its nuances (causes, expressions) vary from one culture to the next.

neutrality (Smith & Kleinman, 1989). Medical students learned to manage their emotions by internalizing the following five strategies:

Transform the emotional contact into something else.

Mentally transform intimate bodily contact into a cold step-by-step procedure.

Accentuate the positive.

Identify the satisfaction in learning or the opportunity to practice medicine.

Use the patient.

Shift awareness of uncomfortable feelings onto the patient as in projection or blame.

Laugh about it.

Joke about it, as joking exempts the doctor from admitting weakness.

Avoid the contact.

Keep the patient covered, look elsewhere, or hurry through the procedure.

These five emotion-management strategies illustrate the culture that is Western medicine. When students rely on that culture for guidance as to how they might manage their emotions, they in effect reproduce the culture for the next generation of students (Smith & Kleinman, 1989).

Consider also hairstylists (Parkinson, 1991). To be professionally successful, hairstylists need to develop an open communication style characterized by expressiveness, affect intensity, empathy, poise, frequent positive facial expressions, and a concealment of negative emotions. Furthermore, the more natural and spontaneous the hairstylist appears to clients, the better the job goes. How do hairstylists learn to manage their emotions in this way? The problem hairstylists face is, essentially, how they can acquire an open interaction style with clients who are often uptight and socially remote. Part of the job of being a hairstylist is to figure this out, and the ones who do develop these emotion management skills report higher job satisfaction. Hairstylists who fail to develop these emotion management skills report lower job satisfaction.

Flight attendants need to adopt an open interaction style similar to that of the hairstylist. To do so, the flight attendant frequently uses “deep-acting” methods that are not too unlike the methods stage actors use during a 2-hour performance. Using deep-acting methods, the flight attendant replaces her natural and spontaneous emotional reactions with an emotional repertoire characterized by constant courtesy to clients (Hochschild, 1983). In all these cases—medical students, hairstylists, and flight attendants—people learn to manage their private, spontaneous feelings and express them in publicly scripted and socially desirable ways of acting. Doing so facilitates smooth professional interactions with their clients (Manstead, 1991).

SUMMARY

Three central aspects of emotion exist: biological, cognitive, and social-cultural. The chapter begins with a biological analysis of emotion because emotions are, in part, biological reactions to important life events. They serve coping functions that allow the individual to prepare him- or herself to adapt effectively to important life circumstances. Emotions energize and direct bodily actions (e.g., running, fighting) by affecting (1) the autonomic nervous system and its regulation of the heart, lungs, and muscles; (2) the endocrine system and its regulation of glands, hormones, and organs; (3) neural brain circuits such as those in the limbic system; (4) the rate of neural firing

and therefore the pace of information processing; and (5) facial feedback and discrete patterns of the facial musculature.

Research on the biological underpinnings of emotion identify that the activation and maintenance of about 10 different emotions can be understood from a biological perspective: interest, joy, fear, anger, disgust, distress, contempt, shame, guilt, and surprise. For instance, four emotions show a unique pattern of autonomic nervous system and endocrine system physiological specificity. Four emotions possess unique anatomical neural circuits in the brain. Differential emotions theory shows that 10 emotions have unique, cross-cultural facial expressions. And six emotions are associated with a unique rate of neural firing in the cortex.

The facial feedback hypothesis asserts that the subjective aspect of emotion is actually the awareness of proprioceptive feedback from facial action. The facial feedback hypothesis appears in two forms: weak and strong. According to its strong version, posed facial expressions activate specific emotions, such that smiling activates joy. According to its weak version, exaggerated and suppressed facial expressions augment and attenuate naturally occurring emotion. Although research is mixed on the strong version, evidence confirms the validity of the weaker version. Facial management moderates emotional experience, as people can intensify or reduce their naturally ongoing emotional experience by exaggerating or suppressing their facial actions.

The central construct in a cognitive understanding of emotion is appraisal. Two types of appraisal—primary and secondary—regulate the emotion process. Primary appraisal evaluates whether or not anything important is at stake in a situation—physical well-being, self-esteem, a goal, financial state, respect, or the well being of a loved one. Secondary appraisal occurs after some reflection and revolves around an assessment of how to cope with a potential benefit, harm, or threat. Appraisal theorists pursue the goal of constructing a decision tree in which knowing all the different appraisals the person makes during an emotional episode will yield a prediction of which emotion the person must inevitably experience (e.g., something is at stake, it was lost, and it was lost because of an outside and illegitimate force → anger).

Emotion is also embedded in cognition via emotion knowledge and attributions. Emotion knowledge involves learning fine distinctions among basic emotions and learning which situations cause which emotions. Sophisticated emotion knowledge enables the individual to appraise a situation with high discrimination and therefore respond with highly appropriate emotions. An attributional analysis focuses on post-outcome attributions to explain when and why people experience pride, gratitude, or hope following positive outcomes and guilt, shame, anger, and pity following negative outcomes.

In a social and cultural analysis of emotion, other people are our richest sources of emotional experiences. During social interaction, we often “catch” other people’s emotions through a process of emotion contagion that involves mimicry, feedback, and, eventually, contagion. We also share and relive our recent emotional experiences during conversations with others, a process referred to as the social sharing of emotion. And the culture socializes its members to experience and express emotions in particular ways. Other people and cultures in general instruct us about the causes of our emotions (emotion knowledge), how we should express our emotions (expression management), and when to control our emotions (emotion management).

READINGS FOR FURTHER STUDY

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Chapter 13

Personality Characteristics

INDIVIDUAL DIFFERENCES IN HAPPINESS, AROUSAL AND CONTROL

HAPPINESS

Extraversion and Happiness

An Aside: Two Types of Happiness

Neuroticism and Suffering

Extraverts Are Generally Happy, Neurotics Are Generally Unhappy

AROUSAL

Performance and Emotion

Insufficient Stimulation and Underarousal

Excessive Stimulation and Overarousal

Credibility of the Inverted-U Hypothesis

Sensation Seeking

Search for New Experiences

Risk Taking

Biological Basis

Affect Intensity

CONTROL

Perceived Control

Self-Confirming Cycles of High and Low Engagement

Desire for Control

Establishing Control

Losing Control

SUMMARY

READINGS FOR FURTHER STUDY

Are you happy? If researchers followed you around all day for several days, would they observe someone who is frequently happy? Would they see a person who experiences positive emotion frequently, or only rarely? When you do feel happy, what sort of happiness is it—an intense and deeply felt joy, or is it something more like contentment? Do you smile strongly and laugh deeply? Do you feel vital and alive?

Are you unhappy? Do you suffer emotionally? How frequently during the day are you unhappy? Would these researchers who followed you around see someone who suffers emotional distress frequently, or only rarely and only in response to special circumstances? When you do suffer the slings and arrows of negative emotionality, how intensely do you feel your negative emotions? Do your negative emotions affect you only on the surface and fade quickly away, or do they affect you deeply and stay with you for days? Is the negative emotion frequent and deep enough to produce physical symptoms such as headaches? Is your typical day an emotional roller coaster of highs and lows, or is your typical day emotionally as flat as a drive through the plains of Nebraska?

Researchers actually carry out investigations of experiences such as these by using the “experience-sampling method” (Larsen, 1989). In this research, participants carry around an electronic device (e.g., a Palm Pilot) that the researchers use to send a signal at various times throughout the day to ask participants to record their emotions and mood at that particular time. When people report their day-to-day emotionality, they generally report high levels of positive emotion and low levels of negative emotion. This pattern of emotion is true for college students (Thomas & Diener, 1990), and it is also true for working mothers juggling multiple roles throughout the day (Williams, Suls, Alliger, Learner, & Choi, 1991). Basically, most people are happy (Diener & Diener, 1996). However, one theme that runs throughout the present chapter is that some people are happier than others and some people are unhappier than others. Just who is happy and who is unhappy can be predicted rather reliably from personality characteristics.

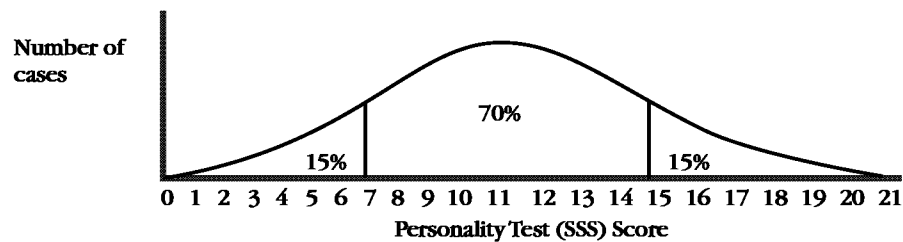
INDIVIDUAL DIFFERENCES IN HAPPINESS, AROUSAL, AND CONTROL

This chapter focuses on three motivational principles related to personality characteristics: (1) happiness, (2) arousal, and (3) control. Any situational event offers the potential to affect all three of these subjective experiences. The personality characteristics presented in this chapter—extraversion, neuroticism, sensation seeking, affect intensity, perceived control, and desire for control—explain why different people have different motivational states even in the same situation.

Taking an examination, for instance, is typically stressful (unhappy), arousing, and somewhat controllable in terms of its outcome. Consider that all situations vary in their capacity to produce positive or negative emotions in us (e.g., parties are fun, accidents are distressing). All situations vary in how stimulating and arousing they are (e.g., libraries are sedate, rock concerts are stimulating). And, all situations vary in how controllable they are (e.g., losing weight is somewhat under your control and somewhat out of your control). Of particular importance to the present chapter, individuals, too, harbor personality characteristics that affect how they respond to these situations in terms of felt happiness, felt arousal, and perceived control.

One important caution applies throughout the chapter: When the discussion refers to specific individual differences, keep in mind that relatively few people are at either extreme of the characteristic. A few people are sensation seekers, and a few people are sensation avoiders, but most people are somewhere in the middle, as shown graphically in the top half of Figure 13.1. As illustrated, when a large number of people take the Sensation-Seeking Scale (SSS), only a minority (about 15%) score between 15 and 21,

Normal Distribution Curve



Typology

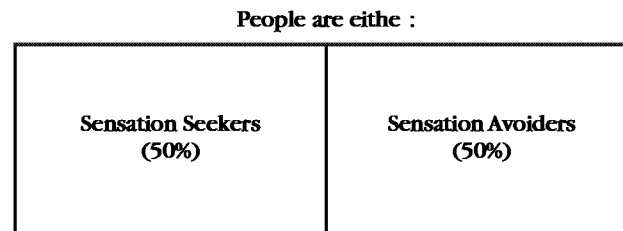


Figure 13.1 Personality Characteristics as Understood within a Normal Distribution versus a Typology

the high end of the SSS, and show themselves to be card-carrying sensation seekers. Only a minority (about 15%) score between 0 and 7, the low end of the SSS, which identifies sensation avoiders. The majority (about 70%) score between 7 and 15 (the middle) and are therefore identified as neither sensation seekers nor sensation avoiders. Also, beware of typologies, shown in the lower part of Figure 13.1. Typologies categorize people as one type of personality or the other (e.g., as a sensation seeker or as a sensation avoider). In doing so, typologies oversimplify the contribution of personality processes in motivation. Personality characteristics exist within everyone. It is just that only a few people harbor a high or intense level of the personality characteristic, most people harbor a moderate amount of the personality characteristic, and a few harbor only a low or mild level of the characteristic.

HAPPINESS

Most people are happy, and this is true almost irrespective of their life circumstances (Diener & Diener, 1996). People in low-income groups generally say they are happy, people with little formal education generally say they are happy, and people in almost every nation say they are happy. Nevertheless, we all know intuitively that the events in our lives affect our emotions and moods. Is it not true that people who get all the breaks are happier than those who do not?

Consider the happiness of lottery winners and accident victims (Brickman, Coates, & Janoff-Bulman, 1978). These are dramatic life events that produce strong emotions. No doubt exists in saying that winning the lottery is a positive life event, and no doubt exists in saying that suffering an accident that leaves one a quadriplegic is a negative

life event. When researchers ask lottery winners and accident victims if they are happy a year after their dramatic life event, people who won large sums of money and people who experience debilitating injuries did not differ much from the average person.

People react strongly to life events, and they react very strongly to events like lottery luck and life-threatening accidents. But they also seem to return back to the same level of happiness they had before the event. When researchers monitored the emotions of victims with spinal-cord injuries, they found that these persons felt very strong negative emotions and only rare positive emotions 1 week after the accident, as you would expect from the circumstances they faced. Over the next 2 months, however, the negative emotions decreased while the positive emotions increased. After 2 months, their positive emotions were stronger and more frequent than were their negative emotions (Silver, 1982).

People seem to have a happiness “set point” (Lykken & Tellegen, 1996). Imagine that you assessed how happy a group of 20-year-olds were and then waited for 10 years to pass so that life events could happen to them all (marriage, career, family, accidents, financial stresses, death of parents, etc.). What you would very likely find when you track down these same people at age 30 is that those who were happy in their 20s are still happy in their 30s and those who were unhappy in their 20s are still unhappy in their 30s. Just like people have a set point that regulates their body weight (discussed in Chapter 4), people also seem to have a set point that regulates their happiness and subjective well-being (Williams & Thompson, 1993). One group of researchers went so far as to conclude that “It may be that trying to be happier is as futile as trying to be taller” (Lykken & Tellegen, 1996, p. 189). That statement is certainly too strong, but it does get its point across that happiness is as much in our genes and personality as it is in the events in our lives.

Actually, we seem to have two emotional set points rather than just one. One set point is for positive emotionality (a happiness set point). Another is for negative emotionality (an unhappiness set point). Plus, how happy and how unhappy we are turn out to be independent (rather than opposite) indicators of well-being.

The status of our happiness and unhappiness set points can be explained by individual differences in our personalities. The happiness set point emerges mostly from individual differences in extraversion. The unhappiness set point emerges mostly from individual differences in neuroticism.

Extraversion and Happiness

The personality characteristic associated with “Who is happy?” is extraversion (DeNeve, 1999; DeNeve & Cooper, 1998). To define extraversion, personality psychologists discuss its three facets. The first is sociability, or the preference for and enjoyment of other people and social situations. The second is assertiveness, or a tendency toward social dominance. The third is venturesomeness, or a tendency to seek out and enjoy exciting, stimulating situations. Thus extraverts are different from introverts because they have greater tendencies toward sociability, assertiveness, and being exciting (Dupue & Collins, 1999; Watson & Clark, 1997).

Emotionally, extraverts are happier than are introverts and they enjoy more frequent positive moods than do introverts (Costa & McCrae, 1980; Diener, Sandvik, Pavot, & Fujita, 1998; Emmons & Diener, 1986; Larsen & Ketelaar, 1991; Lucas & Fujita, 2000;

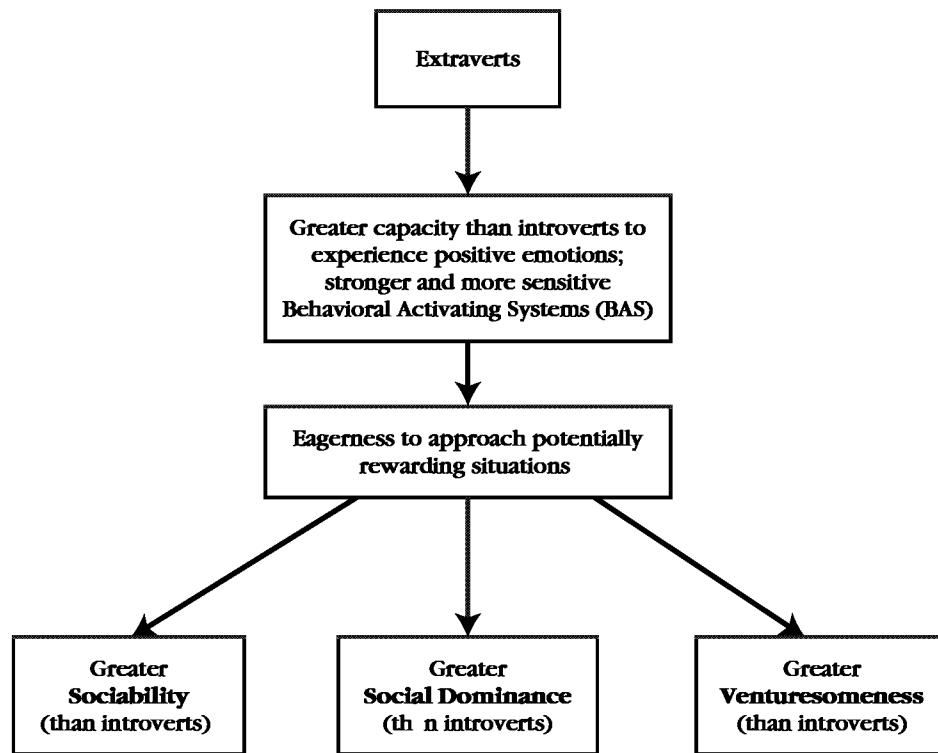


Figure 13.2 Components of Extraversion

Watson, Clark, McIntyre, & Hamaker, 1992; Williams, 1990). Extraverts are highly sociable, but this does not explain why they are happier. Extraverts are happier whether they live alone or with others, whether they live in large cities or remote rural areas, and whether they work in social or nonsocial occupations. Instead of being more social, extraverts are happier than introverts because they are more sensitive to the rewards inherent in most social situations (Lucas et al., 2000). Being more sensitive to rewards, extraverts are more susceptible to positive feelings than are introverts. Thus, because they have a greater sensitivity to positive feelings, extraverts eagerly approach potentially rewarding situations more than do introverts (Elliot & Thrash, 2002), as illustrated graphically in Figure 13.2.

Extraverts are happier than introverts because they possess a greater inherent capacity to experience positive emotions. For instance, watch the emotional reactions of an extravert and an introvert when a positive life event happens to them, and you will see something like joy in the extravert but only contentment in the introvert. This differential capacity for positive emotions occurs because extraverts and introverts possess differing levels of sensitivity to an underlying biological motivation system introduced in Chapter 3, the behavioral activating system (BAS; Dupue & Collins, 1999). So, basically, extraverts have a stronger BAS than do introverts. This brain system detects and regulates signals of reward in the environment. In the BAS, signals of forthcoming reward are the source of positive emotions. Thus, extraverts' emotionality benefits from more frequent and more intense signals of reward that leave them anticipating situations with excitement, feeling happy, and wanting to approach situations.

The motivational function of the BAS is to energize approach-oriented, goal-directed behavior (like sociability, assertiveness, and venturesomeness). For extraverts, signals of reward strongly activate their BAS, while these same environmental signals of reward only mildly activate the BAS of introverts. Extraverts therefore experience a stronger incentive motivational state that energizes and guides their approach behavior. The activated BAS also supplies the extravert with a steady stream of motivational and emotional states such as feelings of happiness, desire, wanting, excitement, enthusiasm, energy, potency, and confidence (Dupue & Collins, 1999). Hence, extraverts are more likely to show approach behavior and they are also more likely to enjoy behaviors such as talking and acting assertively.

The idea that extraversion is associated with brain functioning (a strong BAS) means that extraversion is a biologically based individual difference. Support for the idea that extraverts are born, not made, can be found in studies showing that extraversion is heritable (Eaves, Eysenck, & Martin, 1989; Pedersen, Plomin, McClearn, & Friberg, 1988; Shields, 1976; Viken, Rose, Kaprio, & Kosken, 1994). For instance, twins who are reared apart in very different environments will score similarly on questionnaires designed to assess extraversion, suggesting that extraversion is based more on genetic factors than it is on environmental factors (Pedersen et al., 1988).

An Aside: Two Types of Happiness

The preceding discussion makes it sound like introverts are genetically doomed to a bland, unfulfilled emotional life. While this may be partly true, it is not wholly true because there are two types of happiness—hedonic and eudaimonic (Ryan & Deci, 2001). Hedonic well-being is the totality of one's pleasurable moments. Hedonic well-being reflects a pleasant life, and it represents what most people think of as happiness. Eudaimonic well-being, in contrast, concerns self-realization; it involves engaging oneself in meaningful pursuits and in doing what is worth doing. In essence, it is the actualization of the self, and it is realized through the pursuit and realization of personal authenticity and growth. "Daimonic" means "true self," so eudaimonic means living one's true self. Because it is so closely allied with growth motivation, we will discuss eudaimonic well-being in Chapter 15.

Neuroticism and Suffering

The personality characteristic associated with "Who is unhappy?" is neuroticism. Neuroticism is defined as a predisposition to experience negative affect and to feel chronically dissatisfied and unhappy (McCrae, 1990; Watson & Clark, 1984). Day in and day out, neurotics experience greater stress, more negative emotionality, and a steady stream of mood states such as anxiety, fear, and irritability. The opposite of neuroticism is emotional stability. Thus, neurotics' emotionality suffers to a greater extent than do those who are emotionally stable (Bolger & Zuckerman, 1995; Suls, Green, & Hillis, 1998).

Neurotics suffer emotionally. They do so mostly because of their greater capacity to experience negative emotions and because they chronically harbor disturbed and troubling thoughts (McCrae & Costa, 1987). That is, bad life events bring the neurotic not only a bad life event but also a host of upsetting and pessimistic thoughts that have a way of hanging around long after the bad event is over.

This differential capacity for negative emotions occurs because neurotic and emotionally stable individuals possess differing levels of sensitivity to the underlying biological motivation system introduced in Chapter 3 as the behavioral inhibition system (BIS; Gray, 1987a; Tellegen, 1985). Neurotics have a strong and highly sensitive BIS. This brain system detects and regulates environmental signals of punishment. In the BIS, signals of forthcoming punishment are the source of negative emotions such as fear and anxiety. For this reason, neurotics are more vulnerable and more susceptible to negative emotions (Larsen & Ketelaar, 1991). Thus, neurotics' emotionality suffers from more frequent and more intense signals of punishment that leave them anticipating that the situations they face will bring fear and anxiety. This is upsetting enough to breed a motivational want to avoid a wide range of situations.

The motivational function of the BIS is to energize avoidance-oriented, goal-directed behavior (like escape, withdrawal, and avoidance). For neurotics who are exposed to a potentially punishing situation (e.g., a job interview, taking an exam, being in a noisy house), signals of punishment strongly activate their BIS while these same signals of punishment only mildly activate the BIS of emotionally stable individuals. Neurotics therefore experience a stronger incentive motivational state that energizes and guides their avoidance behavior. The activated BIS also supplies the neurotic with a steady stream of motivational and emotional states such as feelings of fear, anxiety, irritability, distress, hostility, anger, depression, and self-consciousness (McCrae & Costa, 1986). Hence, neurotics are more likely to show avoidance behavior and they are also more likely to suffer emotional distress during behaviors such as taking an examination (Bolger, 1990) or arguing with a spouse (Bolger & Schilling, 1991).

Extraverts Are Generally Happy, Neurotics Are Generally Unhappy

Extraversion and neuroticism represent two basic personality dimensions. Some even argue that extraversion and neuroticism represent *the* basic personality dimensions (Eysenck, 1991). The personality dimension that predisposes the individual toward a positive emotionality, the BAS, and an approach temperament is extraversion. The personality dimension that predisposes the individual toward a negative emotionality, the BIS, and an avoidance temperament is neuroticism (Costa & McCrae, 1980; McCrae & Costa, 1991; Elliot & Thrash, 2002; Gray, 1982, 1987a, 1987b; Tellegen, 1985).

Several reliable and valid questionnaires exist to measure these personality dimensions, including the NEO Personality Inventory scales (NEO-PI-R; Costa & McCrae, 1992), the Big Five Inventory (BFI; John & Srivastava, 2000), and the Eysenck Personality Questionnaire (EPQ-R; Eysenck, Eysenck, & Barrett, 1985). Based on people's scores on these questionnaires, psychologists can predict with confidence who will be excited, enthusiastic, and happy about being in potentially rewarding situations (i.e., extraverts), and psychologists can predict with confidence who will be inhibited, hesitant, and anxious about being in potentially threatening situations (i.e., neurotics). Psychologists' confidence stems from knowing the following. When extraverts enter a situation, their BAS motivational system generally makes them particularly sensitive to its potentially rewarding aspects and thus they experience the positive emotions it affords and they willingly approach it. When neurotics enter a situation, their BIS motivational system generally makes them particularly sensitive to its potentially

punishing aspects and thus they experience the negative emotions it affords and they willingly avoid it.

AROUSAL

Arousal represents a variety of processes that govern alertness, wakefulness, and activation (Anderson, 1990). These processes are cortical, behavioral, and autonomic mechanisms. Thus, the activity of the brain (cortical), skeletal muscular system (behavioral), and autonomic nervous system (autonomic) together constitute most of the motivational construct of arousal.

Four principles explain arousal's contribution to motivation:

1. A person's arousal level is mostly a function of how stimulating the environment is.
2. People engage in behavior to increase or decrease their level of arousal.
3. When underaroused, people seek out opportunities to increase their arousal levels, because increases in environmental stimulation are pleasurable and enhance performance whereas decreases are aversive and undermine performance.
4. When overaroused, people seek out opportunities to decrease their arousal levels, because increases in environmental stimulation are aversive and undermine performance whereas decreases are pleasurable and enhance performance.

These four principles can be organized collectively into the “inverted-U” relationship between arousal and performance/well-being shown in Figure 13.3. The inverted-U curve, first introduced 100 years ago by Robert Yerkes and John Dodson (1908), helps explain the relationship between felt arousal and people's ensuing motivational and emotional states (Berlyne, 1967; Duffy, 1957; Hebb, 1955; Lindsley, 1957; Malmö, 1959).

Performance and Emotion

The inverted U curve illustrates that a low level of arousal produces relatively poor performance (lower left). As arousal level increases from low to moderate, both the intensity and the quality of performance improve. As arousal level continues to increase from moderate to high, performance quality and efficiency (but not intensity) decrease (lower right). Thus, optimal performance is a function of being aroused but not too aroused. To make sense of the arousal–performance relationship, recall your personal performance efficiency while doing something important—public speaking, competing in athletics, or job interviewing, for instance. When nonchalant and underaroused or when anxious and overaroused, performance tends to suffer. When moderately aroused—alert but not tense—performance tends to be optimal.

A moderate level of arousal coincides with the experience of pleasure (Berlyne, 1967). Low stimulation produces boredom and restlessness; high stimulation produces tension and stress. Both boredom and stress are aversive experiences, and people strive to escape from each. When underaroused and experiencing negative affect, a person will seek out activities that offer increased stimulation, opportunities for exploring something new, and perhaps even risk taking. On the other hand, when arousal is greater

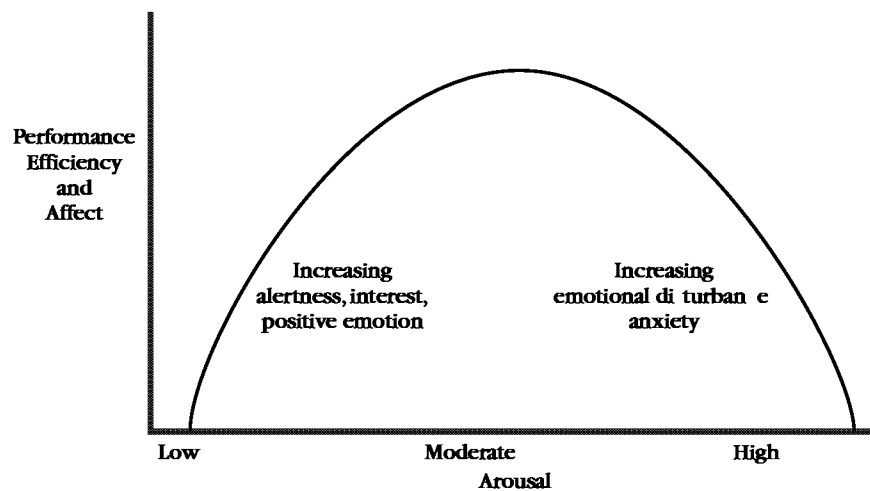


Figure 13.3 The Inverted-U Curve: Relationship between Arousal Level and Performance/Well-Being

Source: From "Drive and the C. N. S.—Conceptual Nervous System," by D. O. Hebb, 1955, *Psychological Review*, 62, pp. 245–254.

than optimal, a person will avoid and is repulsed by further increases in environmental stimulation. When overaroused increased stimulation, novelty, and risk create negative affect—stress, frustration, and hassle. Overaroused people find themselves attracted to an environmental calm—a vacation, a casual reading of the newspaper, or going for a quiet walk. Thus, the inverted U curve predicts when increases and decreases in stimulation will lead to positive affect and approach behavior and when they will lead to negative affect and avoidance.

Insufficient Stimulation and Underarousal

Sensory deprivation research illustrates the psychological consequences of being underaroused (Benson, Heron, & Scott, 1954; Heron, 1957; Zubek, 1969). Sensory deprivation refers to an individual's sensory and emotional experience in a rigidly unchanging environment. In his studies, Woodburn Heron (1957) paid male college students a substantial amount of money per day to lie on a comfortable bed for as many days as they cared to stay (see Figure 13.4). The participants' task was simply to stay in the unchanging environment, with time out for meals and visits to the restroom. To restrict sensory information from touch, participants wore cotton gloves with long cardboard forearm cuffs. They also wore a special translucent visor that restricted their visual information. To restrict auditory information, an air conditioner purred out a steady hum that masked most sounds.

Even on the first day, participants reported an inability to think clearly. As the hours passed, many participants reported experiencing blank periods (running out of things to think of) and others just let their minds wander. Nearly everyone reported dreams and visions while awake. During the study, the sensory-deprived men took a series of arithmetic, anagram, and word association tests after 12, 24, and 48 hours of deprivation. Performance on even simple math problems depreciated quickly. After the second day,



Figure 13.4 Sensory Deprivation Chamber

Source: From "The Pathology of Boredom," by W. Heron, 1957, *Scientific American*, 196, pp. 52–56. Copyright 1957 by *Scientific American*. Adapted with permission from the illustration by Eric Mose.

computations like $16 \times 65 = ?$ were too difficult to solve. Participants also became increasingly irritable. In fact, Heron found it difficult to keep his irritated participants in the experiment for more than 2 or 3 days, despite the large financial incentive to stay.

Sensory deprivation studies underscore the fact that the brain and nervous system prefer a continual and moderate level of arousal generated by environmental stimulation. Imagine the emotional experiences of zoo animals in cages, inmates in prison cells, older adults in nursing homes, political prisoners in solitary confinement, long-term patients in hospital wards, and students enduring monotonous lectures. But human beings are not simply passive recipients of whatever stimulation the environment offers. When understimulated, people rely on various cognitive and behavioral means for increasing arousal level (e.g., mental imagery, social interaction). That is, human beings harbor motives for counteracting insufficient stimulation and underarousal.

Excessive Stimulation and Overarousal

Sometimes life is boring, but other times life is stressful. Stress comes from major events, such as divorce, physical injury, and unemployment (Holmes & Rahe, 1967; Iversen & Sabroe, 1989); from daily hassles, such as misplacing or losing things and getting stuck in traffic (DeLongis, Folkman, & Lazarus, 1988; Lazarus & DeLongis, 1983); and from chronic circumstances, such as inadequate child care, overcrowding, or repetitious relationship difficulties (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Eckenrode, 1984). Major life events jolt the body's nervous and endocrine systems, whereas daily hassles and chronic circumstances produce a cumulative taxing effect on bodily systems.

Overstimulating, stressful environments upset emotional states, impair cognitive activity, and accelerate physiological processes. Emotional disruption manifests itself in feelings of anxiety, irritability, and anger (Horowitz, Wilner, Kaltreider, & Alvarez, 1980). Cognitive disruption manifests itself in confusion, forgetfulness, and impaired concentration (Broadbent, Cooper, FitzGerald, & Parkes, 1982). Physiological disruption manifests itself in sympathetic nervous system hyperactivity, as through high blood pressure (Seyle, 1956). As a case in point, imagine that your term paper is due in 2 hours and is nowhere near its completion. Your amiability is probably decidedly negative (few overly stressed individuals smile, laugh, and tell jokes), your mental efficiency is probably disturbed (not being able to think straight), and your heart rate, muscle tone, and vulnerability to a headache are probably high and rising.

Because stress and strain are aversive ways of feeling, people generally want to escape from overstimulating environments. When unable to do so, daily functioning is characterized by negative affect, cognitive confusion, performance impairment, and health problems, as discussed in Box 13. Fortunately, just as we harbor motives to counteract insufficient stimulation and underarousal, we also harbor motives to counteract excessive stimulation and overarousal.

Credibility of the Inverted-U Hypothesis

The credibility of the inverted-U curve (see Figure 13.3) is not without debate. Rob Neiss (1988) levied four criticisms against the hypothesis, two of which are relevant to motivation and emotion (Anderson, 1990). Neiss's first criticism is that the inverted-U

BOX 13

curve is descriptive rather than explanatory. That is, the hypothesis summarizes the relationship between arousal and performance/emotion, but it stops short of explaining *how* arousal facilitates or impairs performance/emotion.

Neiss's (1988) second criticism is that even if the inverted-U hypothesis is true, it is still trivial. In other words, the inverted-U hypothesis applies only when arousal levels are extreme, such as in sensory-deprivation studies. Neiss concludes that the inverted-U hypothesis does not apply to everyday affairs in which arousal level changes relatively little. While some motivation psychologists agree with this criticism, others disagree.

To illustrate how the inverted-U hypothesis applies to mundane changes in arousal, college students completed a pair of vocabulary tests under a condition of either leisure

or stress (time pressure; Revelle, Amaral, & Turriff, 1976). In addition, before taking the tests, all students took either a 200-mg caffeine pill (equivalent to the caffeine in two cups of coffee) or a placebo pill (no caffeine). The purpose of the time pressure and caffeine manipulations was to create the sort of high stimulation that occurs in everyday life. The experiment had one more important variable: Each student completed a personality survey to differentiate introverts (people who are chronically overaroused) from extraverts (people who are chronically underaroused). Based on the inverted-U hypothesis, the experimenters predicted that (1) overaroused introverts would perform well when relaxed but poorly when stimulated, whereas (2) underaroused extraverts would perform poorly when relaxed but well when stimulated. Results confirmed the predictions. The experiment is important because it shows that the inverted-U hypothesis applies nicely to everyday sources of stimulation—caffeine and time pressure. Moderate everyday arousal is associated with optimal performance and emotion, while being underaroused or overaroused is not.

Sensation Seeking

Human beings differ in their genetic baseline level of arousal and in their reactivity to environmental stimuli. Baseline level of arousal is how aroused a person is without external stimulation. Reactivity refers to one's arousal reaction when exposed to external stimulation.

Sensation seeking is the personality characteristic related to arousal and reactivity. A high sensation seeker prefers a continual external supply of brain stimulation, becomes bored with routine, and is continually in search of ways to increase arousal through exciting experiences. A low sensation seeker prefers less brain stimulation and tolerates routine relatively well. In general, the sensation-seeking construct pertains to the extent to which a person's central nervous system (brain and spinal cord) requires change and variability, as sensation seekers prefer to change activities, change television channels, change drugs, change sexual partners, and so on (Zuckerman, 1994).

Sensation seeking is defined as "the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience" (Zuckerman, 1994). Marvin Zuckerman (1994) uses the example of driving very fast after heavy drinking to illustrate a sensation seeker's willingness to take physical risks (injure self or others), social risks (being exposed as a drunk driver), legal risks (being arrested and jailed), and financial risks (being fired from work). Such risks are the price sensation seekers are willing to take to receive the sensations and experiences they seek.

Search for New Experiences

The sensation seeker continually searches for novel experiences—spicy foods (Terasaki & Imada, 1988), switching television programs (Schierman & Rowland, 1985), listening to music with some punch (Little & Zuckerman, 1986), and so on. One manifestation of the search for new experiences is sex. Compared to sensation avoiders, sensation seekers report a greater frequency and variety (number of partners) in sexual activity (Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972; Zuckerman, Tushup, & Finner, 1976). Sensation seekers report that less of a relationship and less emotional

involvement are necessary prerequisites for participation in sexual relations than do sensation avoiders (Hendrick & Hendrick, 1987; Zuckerman et al., 1976). Furthermore, as parents, high sensation seekers set more permissive standards for their children's sexual activity (Zuckerman et al., 1976).

Drugs can also provide the means for a quick arousal boost. Drugs also open the door to new experiences (hallucinations), release inhibitions against risky behavior, and serve as an escape from boredom. Through any or all of these means of altering experiences, drug use functions as a form of sensation seeking (Zuckerman, 1978, 1994; Zuckerman et al., 1972). To substantiate these claims, Zuckerman and his colleagues (1972) asked college students to complete the Sensation-Seeking Scale (SSS) and a questionnaire on their drug and alcohol use. Sensation seekers reported frequent alcohol and drug use. Their search for new experiences also extends into deviant acts such as vandalism, aggression, stealing, and criminality (Newcomb & McGee, 1991; White, Labouvie, & Bates, 1985; Zuckerman, 1979).

Risk Taking

No one really likes risk per se, which is essentially the forecast that a behavior will produce aversive consequences. It is not that sensation seekers are attracted to physical, social, legal, or financial risks; rather, sensation seekers see sensations and experiences being worth these risks, whereas sensation avoiders do not. Thus, "risk accepting" seems to be a more appropriate term than does "risk taking."

High sensation seekers voluntarily engage in physically risky hobbies, such as motorcycling (Brown, Ruder, Ruder, & Young, 1974), parachuting and skydiving (Hymbaugh & Garrett, 1974), adventuresome travel (Jacobs & Koeppel, 1974), immigration (Winchell & Carment, 1988), cigarette smoking (Zuckerman, Ball, & Black, 1990), downhill skiing (Cahoon, 1988), and gambling (Kuhlman, 1975). In contrast, low sensation seekers show aversive reactivity to risky sources of stimulation (Mellstrom, Cicala, & Zuckerman, 1976). Gambling illustrates some of the sensation seekers' motivation for risk taking, as excitement, rather than money, motivates most people's gambling (Anderson & Brown, 1984).

Sensation seekers' risk taking manifests itself in many areas of life, such as in criminal behavior (shoplifting, selling drugs), minor violations (traffic offenses), finances (gambling, risky businesses), and sports (parachuting) (Horvath & Zuckerman, 1993). Fast driving, for instance, offers potential physical, social, legal, and financial risks. Compared to sensation avoiders, sensation seekers report driving fast (well over the posted speed limit) (Arnett, 1991; Clement & Jonah, 1984; Zuckerman & Neeb, 1980), and they do not perceive tailgating (driving close behind the car in front) as risky or as physiologically upsetting (Heino, van der Molen, & Wilde, 1992, as reported in Zuckerman, 1994).

Biological Basis

Biochemical brain events influence how people react to environmental stimulation. So researchers investigate the links between the sensation-seeking trait and biochemical events in the brain. The most reliable finding is that sensation seekers have low levels of monoamine oxidase (MAO) (Schooler, Zahn, Murphy, & Buchsbaum, 1978). MAO is a limbic system enzyme involved in breaking down brain neurotransmitters such as

dopamine and serotonin. Dopamine contributes to the experiences of reward and therefore facilitates approach behaviors (Stellar & Stellar, 1985). Serotonin contributes to a biological inhibition, or to the brain's physiological stop system, and therefore inhibits approach behaviors (Panksepp, 1982). Sensation seekers tend to have relatively high levels of dopamine; hence, their biochemistry favors approach over inhibition (Zuckerman, 1994). They also tend to have relatively low levels of serotonin; hence, their biochemistry fails to inhibit them from risks and new experiences.

Affect Intensity

Affect intensity concerns people's capacity to become aroused emotionally. It is defined in terms of the strength with which individuals typically experience their emotions (Larsen & Diener, 1987). Affect-intense individuals experience their emotions strongly and show emotional reactivity and variability across many different emotion-eliciting situations. Affect-stable individuals experience their emotions only mildly and show only minor fluctuations in their emotional reactions from moment to moment or from day to day.

Researchers measure affect intensity with a self-report questionnaire that includes items such as the following: When I feel happy, it is a strong type of exuberance, and When I am nervous, I get shaky all over (Larsen & Diener, 1987). Originally, researchers assessed affect intensity in an interesting, although laborious, way that nicely illustrates people's emotionality over time (Larsen, 1988). Over a period of 80–90 consecutive days, respondents completed a daily mood questionnaire that featured positive (e.g., happy, joyful) and negative (e.g., depressed, worried) mood words. To compute affect intensity, the individual's daily score on the negative mood words was totaled and subtracted from the daily score on the positive mood words total to yield a daily mood. On each consecutive day, the overall daily mood score was plotted on a graph. How much the person's daily mood score deviated from neutral (0) defined his or her affect intensity. A daily mood graph for three different people in the experiment appears in Figure 13.5. The daily mood of the affect-intense individual (subject 23) rose and fell rather substantially. Days were very good or very bad. The daily mood of the affect-stable individual (subject 21) hovered continuously around neutral. Days were mostly the same, emotionally speaking. The more typical daily mood graph appears in the center (subject 74) and shows the daily emotionality of a person who was neither affect intense nor affect stable.

For purposes of illustration, imagine that each of the following events, some good and some bad, recently happened to you: You won a scholarship you desperately needed or received a letter from a long-lost friend (positive life events); your automobile had a flat tire or you saw your ex-boyfriend/girlfriend with a new flame (negative life events) (Larsen, Diener, & Emmons, 1987). Suppose further that you were asked to rate precisely how good or how bad each event was immediately after it occurred. For example, how good did you feel when you received a letter from your long-lost friend? How bad did you feel when your tire went flat? Just how good or how bad the events were in the lives of affect-intense and affect-stable individuals appear in Figure 13.6. For all bad events (upper figure), affect-intense individuals (black squares) reported a significantly worse negative emotionality than did affect-stable individuals. For all good events (lower figure), affect-intense individuals (black squares) reported a significantly more positive emotionality than did affect stable individuals.

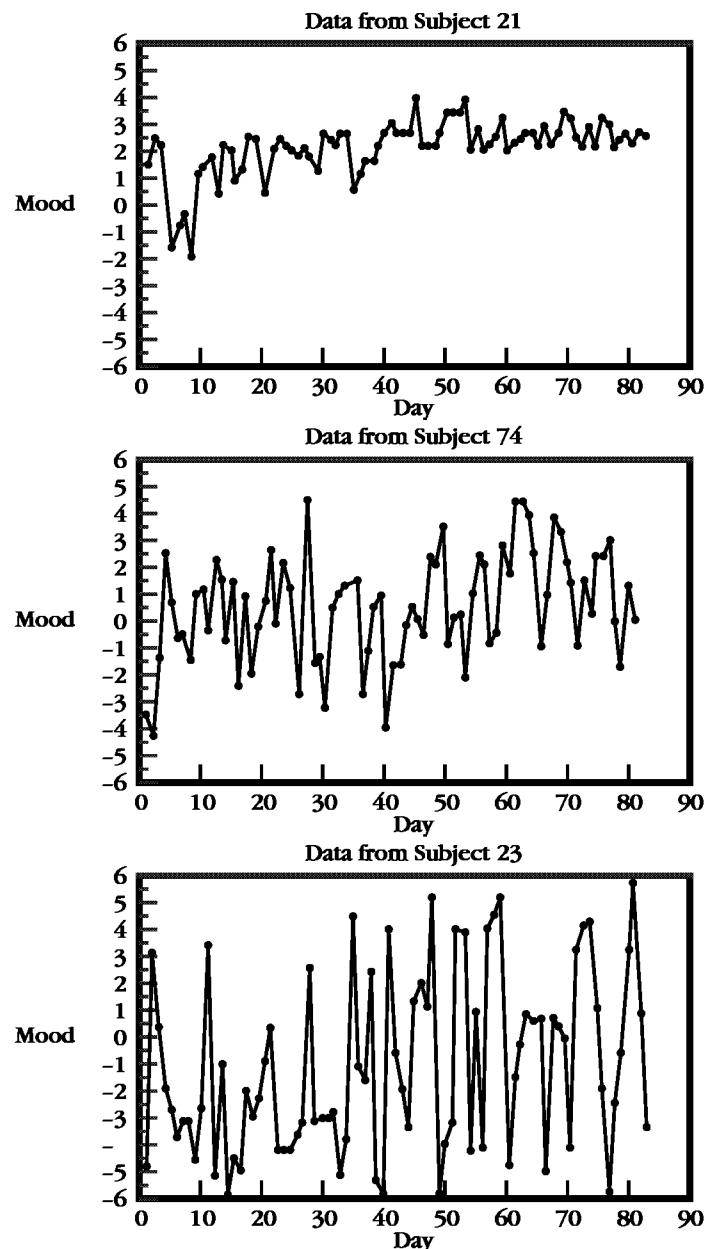


Figure 13.5 Daily Mood Reports Graphed Over 80 Consecutive Days

Source: From "Individual Differences in Affect Intensity," by R. J. Larsen, 1988, paper presented at the annual meeting of the Motivation and Emotion Conference at Nags Head, NC.

Affect-intense and affect-stable individuals do not differ physiologically from one another (Blascovich et al., 1992). Instead, they differ psychologically, as affect-intense individuals are more psychologically sensitive to changes in arousal than are affect-stable individuals. It is almost as if affect-intense persons have a highly sensitive "arousal thermostat" that monitors their arousal increases. Affect-stable individuals, on the other hand, have a relatively dull and insensitive arousal thermostat (Blascovich et al., 1992).

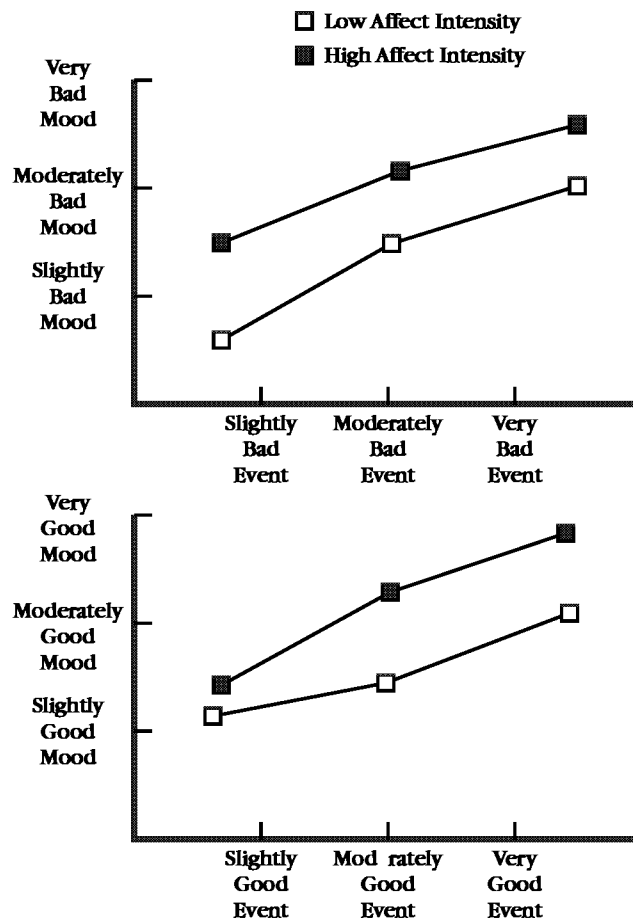


Figure 13.6 Affective Reactions to Good and Bad Events by Affect-Intense and Affect-Stable Individuals

Source: From "Affect Intensity and Reactions to Daily Life Events," by R. J. Larsen, E. Diener, and R. A. Emmons, 1987 *Journal of Personality and Social Psychology*, 51, pp. 803–814. Copyright 1987 by American Psychological Association. Adapted with permission.

CONTROL

Many possible personality characteristics could be included under the category of personal control beliefs, including locus of control (Findley & Cooper, 1983; Levenson, 1981; Rotter, 1966), perceived control (Skinner, 1985), causality orientations (Deci & Ryan, 1985a), mastery versus helpless orientations (Diener & Dweck, 1978, 1980), explanatory style (Peterson & Seligman, 1984), desire for control (Burger, 1992), type A behavior pattern (Strube, Boland, Manfredi, & Al-Falaij, 1987), and self-efficacy (Bandura, 1986; Berry & West, 1993). Two of these personality characteristics, however, adequately capture most of the spirit of control beliefs: perceived control and the desire for control. Perceived control concerns differences in people's preperformance expectancies of possessing the needed capacity to produce positive outcomes (Skinner et al., 1998). Desire for control concerns the extent to which people strive to make their own decisions, influence others, assume leadership roles, and enter situations in overly prepared ways (Burger, Oakman, & Bullard, 1983).

Perceived Control

Perceived control refers to the beliefs and expectations a person holds that he or she can interact with the environment in ways that produce desired outcomes and prevent undesired outcomes (Skinner, 1995; Skinner et al., 1998). In order to perceive that one has control over a given situation, one needs two things to be true. First, the self must be capable of obtaining the available desired outcome. Second, the situation in which one attempts to exercise control needs to be at least somewhat predictable and responsive.

Research on learned helplessness (Chapter 9) shows that as people find themselves in unpredictable, unresponsive environments, they learn that their actions and efforts are futile. But the reverse is not necessarily true. That is, when environments are predictable and responsive, people do not necessarily put forth strong effort to exert control over their outcomes. This is true because even structured situations can be difficult to control, as is often the case in education, sports relationships, and at work. When some barrier like task difficulty separates the person from attractive outcomes (e.g., good grades, fame, marriage, promotion), individual differences in perceptions of control intervene, explaining when and why people willingly put forth the effort necessary to control their fate.

Perceived control beliefs predict how much effort a person is willing to exert (Skinner, 1985; Skinner et al., 1998). When a person with relatively high perceived control faces a reasonably structured situation, he seeks out and selects relatively challenging tasks, sets relatively high goals, and generates sophisticated plans about how to succeed and what to do when progress is slow. With this forethought, a person with high perceived control initiates action, exerts effort, focuses concentration, and persists in the face of difficulty. During performance, the high-perceived-control individual keeps his or her plans and strategies in mind, maintains positive emotional states, monitors problem-solving strategies, and generates and monitors feedback to adjust or improve relevant skills. Such an engaged focus on the task generally leads to strong performance and makes control over desirable and undesirable outcomes possible. In contrast, when a person with relatively low perceived control faces the same situation, he seeks out and selects relatively easy tasks, sets lower and vaguer goals, and generates simple plans with few fallback strategies. If things go wrong, concentration is likely to wander, confidence is quick to drop, and attention often turns to ruminating over why the task is so difficult. As effort decreases and cognitive and emotional engagements decline, discouragement and passivity set in, and performance suffers accordingly. Over time, such events lead people to become more pessimistic, to reduce their expectations of future control, and to quit making plans and strategies to prevent such a recurrence.

To assess individual differences in perceptions of control, researchers use questionnaires that contain the following items (Skinner, Chapman, & Baltes, 1988):

1. If you decide to sit yourself down and learn something really hard, can you learn it?
2. I'll bet you don't like to get bad grades. Can you do anything to keep from getting any?
3. Let's say: You decide that you're not going to get any problems wrong (like on a math or spelling paper). Can you do it?

From these items (written for elementary-grade students), perceived control appears to be conceptually similar to related constructs, such as perceived competence, self-efficacy, and perceived ability. One difference, however, is that perceived control functions as the antecedent foundation on which these other beliefs are constructed. For instance, perceived control bolsters perceived competence, and perceived competence predicts performance outcomes, such as preference for challenge and positive emotionality (Boggiano, Main, & Katz, 1988). Perceived control is, therefore, a necessary forerunner for constructing beliefs about one's competence efficacy, and ability. A second difference between perceived control and these other constructs is that perceived control beliefs can emanate from any capacity, not just from one's own competence, efficacy, or ability. For instance, an athlete might perceive high control because of a capacity to solicit assistance from the coach, from teammates, or from the heavens. The belief that one has high control over outcomes therefore means that one has control over whatever it is that controls the outcome —self, teammates, luck, or the heavens.

Self-Confirming Cycles of High and Low Engagement

Engagement in the effort to gain control over an important outcome exists on a continuum that ranges from disaffection to engagement (Skinner & Belmont, 1993; Wellborn, 1991). When highly engaged, people exert strong and persistent effort and express positive emotion; when disaffected, people behave passively and express negative emotion (Patrick et al., 1993). Thus, engagement captures the intensity and emotional quality of a person's participation during somewhat difficult undertakings to control the outcomes that matter to them (Connell & Wellborn, 1991; Skinner, 1991).

Perceived control beliefs influence the individual's engagement, emotion, coping, and challenge-seeking (Boggiano et al., 1988; Skinner, 1995; Skinner et al., 1998). People with high perceived control show relatively high effort, concentrate and pay attention, persist in the face of failure, maintain interest and curiosity in the task, and maintain optimism for future positive outcomes. People with low perceived control show relatively low effort, doubt their capacities, tend to give up in the face of challenge or failure, become discouraged quickly, are prone to passivity, anxiety, and even anger, and appear to simply go through the motions of participating (Skinner et al., 1998). Such patterns of engagement versus disaffection are important because they predict the outcomes people attain. Attained outcomes, in turn, effect performers' postperformance perceptions of control. Hence, engaged effort produces the positive outcomes and postperformance perceptions of high control that produced the engaged effort in the first place. Disaffection (i.e., just passively going through the motions) produces the negative outcomes and postperformance perceptions of low control that produced the disaffected effort in the first place. This is the so-called self-confirming cycle of higher versus lower engagement.

One group of researchers tested the validity of these self-confirming cycles over a 4-month period by asking grade school children to complete short questionnaires (Schmitz & Skinner, 1993). The researchers assessed the children's expected control, extent of engagement, actual performance, perceived performance, and estimates of future control. On each graded assignment, the researchers examined the following relationships: (1) effects of preperformance expected control on subsequent engagement, (2) effects of engagement on actual performance, and (3) effects of performance outcomes on subsequent expectations of control. Results supported the validity of all

three effects. Perceived control beliefs contributed positively to effort, which enhanced performance, which fueled further gains in the children's developing perceptions of control in that domain (Schmitz & Skinner, 1993). Over the course of many months and years, this self-confirming cycle explains how and why some people develop strong personal control beliefs while others do not.

Desire for Control

Desire for control (DC) reflects the extent to which individuals are motivated to establish control over the events in their lives (Burger, 1992; Burger & Cooper, 1979). High-DC individuals approach situations by asking themselves whether they will be able to control what happens. They are not content to take whatever life throws their way but instead are motivated to influence life and what happens (Burger, 1992). High-DC persons prefer making their own decisions, prepare for situations in advance, avoid dependence on others, and assume leadership roles in group settings. Low-DC persons tend to avoid responsibilities and feel comfortable having others make decisions for them (Burger, 1992; Burger & Cooper, 1979). They prefer to take life as they find it—to wing it.

The scale to assess the desire for control is the DC scale (Burger, 1992; Burger & Cooper, 1979). Two items from the DC scale are the following: (1) I prefer a job where I have a lot of control over what I do and when I do it and (2) I like to get a good idea of what a job is all about before I begin.

What makes the desire for control different from perceived control is that high-desire-for-control individuals want control over their fates irrespective of how much control they currently have and irrespective of how structured or responsive the situation appears to be. Desire for control relates to (i.e., predicts) a variety of experiences and behaviors that are fundamental to personal control beliefs, including learned helplessness, depression, illusion of control, hypnosis, achievement, perceived crowding, stress and coping, interpersonal style with friends, health habits, and even an older adult's choice of a place to die—in control at home or managed by others in a hospital (Burger, 1984, 1992; Burger & Arkin, 1980; Burger & Cooper, 1979; Burger et al., 1983; Burger & Schnerring, 1982; Smith et al., 1984). The common links between desire for control and these behavioral manifestations of personal control are the high desire to, first, establish control and, second, to restore lost control.

Establishing Control

Control is often an issue in our daily conversations and interactions with others. To establish some measure of control over interpersonal conversations (what will be talked about, what attitudes the persons in the conversations hold, what plans will be made), high-DC individuals speak loudly, explosively, and rapidly; they respond quickly to questions and comments; and they interrupt and talk over their partners (Dembroski, MacDougall, & Musante, 1984). High-DC persons also tend to end conversations when they want to, usually after having finished what they wanted to say or after having successfully persuaded the other person of the correctness of the high-DC individual's viewpoint (i.e., after establishing control; Burger, 1990, 1992).

Desiring control is generally adaptive and productive when situations are controllable. Often, however, high-DC individuals want and expect control over events when, in

fact, their outcomes are determined by chance. For example, many gambling opportunities such as slot machines, lottery games, and roulette wheels are determined by chance (Burger & Cooper, 1979). Nonetheless, high-DC individuals tend to perceive that they can control such outcomes through personal effort. The *desire* for control feeds into the *illusion* of control (Burger, 1986, 1992).

Achievement situations provide an arena for high-DC individuals' desires to establish control (Burger, 1985). High-DC individuals typically interpret a difficult task as a challenge to their ability to control. Thus, when confronted with a difficult task, the high-DC individual should persist longer than the low DC individual. To give up on a difficult task is to admit that the task is beyond personal control. To test this idea, Jerry Burger gave students a series of insoluble puzzles and observed how long the high- and low-DC individuals persisted. As predicted, high-DC individuals persisted longer at the puzzles than did the low-DC individuals.

Figure 13.7 shows a four-step model to illustrate the multidimensional nature of the high-DC individual's quest to establish control in achievement situations (Burger, 1985). High-DC persons select hard tasks because they generally have high aspirations and standards, put forth unusually high effort when challenged, persist at difficult tasks and are slow to give up and move on, and make self-serving and control-enhancing attributions such as taking credit for success while attributing failure to an unstable cause (Burger, 1985, 1992). The desire for control is generally a positive resource in achievement situations. But Figure 13.7 also outlines the desire for control's counterproductive side. Because high-DC individuals strongly desire control, they sometimes attempt overly difficult goals, exhibit a hostile reactance effect with failure, persist too long on tasks that cannot be solved, and develop an illusion of control. What these data show is that the

	Aspiration Level	Response to Challenge	Persistence	Attributions for Success and Failure
High DC Compared with Low DC	Select harder tasks; set goals more realistically	React with greater effort	Work at difficult task longer	More likely to attribute success to self and failure to unstable source
High DC Benefit	Higher goals are achieved	Difficult tasks are completed	Difficult tasks are completed	Motivation level remains high
High DC Liability	May attempt goals too difficult	May develop performance-inhibiting reactions	May invest too much effort	May develop an illusion of control

Figure 13.7 Influence of Desire for Control during Achievement-Related Performance

Source: From "Desire for Control and Achievement-Related Behaviors," by J. M. Burger, 1985, *Journal of Personality and Social Psychology*, 48, pp. 1520–1533. Copyright 1985 by American Psychological Association. Adapted with permission.

desire for control leads people to overestimate how well they will perform, to overinvest their energies, to persist too long on difficult tasks, and to interpret success and failure feedback in ways that feed an illusion of control.

Losing Control

People sometimes face situations where little control is possible. In circumstances such as overcrowding, military life, nursing homes, hospitals, prisons, and living next door to an offensive dump or an ear-pounding airport, little control is possible. Such situations present an obvious plight for the high-DC individual. When their control is threatened or lost altogether, high-DC individuals exhibit distinct reactions, such as distress, anxiety, depression, dominance, and assertive coping (Burge, 1992).

Visiting the dentist's office is one of these low-control situations (Law, Logan, & Baron, 1994). When people with a high DC visit the dentist, the idea of another person using tools on their teeth causes unusually high levels of anxiety, anticipated pain, and distress. Interestingly, a 20-minute stress-inoculation training session immediately before the dental visit can give high-DC individuals the control-coping strategies and responses they desire (Law et al., 1994).

Crowding is another low-control situation. Crowding, defined by the number of people per square foot, undermines control because one cannot move about freely (Stokols, 1972). Having a lot of other people around, as in dense traffic, overpopulated sidewalks, and long supermarket checkout lines, interferes with anyone's ability to get things done. High-DC individuals are more vulnerable to perceptions of being crowded, and they therefore try to avoid such distressing situations (Burger, 1992).

When people desire control but the environment refuses to afford it, the person becomes vulnerable to learned helplessness and depression. Jerry Burger and Robert Arkin (1988) asked high- and low-DC individuals to participate in a typical learned-helplessness experiment in which they were exposed to harsh, uncontrollable, and unpredictable noise (e.g., see Chapter 9). Compared to low-DC persons, high-DC persons reported higher levels of post-task depression. Furthermore, the magnitude of helplessness and depression varied in proportion to how important control was for that person in that situation (Mikulincer, 1986). So, in controllable environments, the desire for control works as a motivational asset, but, in uncontrollable environments, the desire for control works as a motivational liability.

SUMMARY

Chapter 1 identified a number of questions in motivation study that are best answered through a study of personality and individual differences. These questions were as follows: For which motives are there individual differences? How do such motivational differences between people arise? and What are the implications of such individual motivational differences? This chapter identified two personality characteristics related to happiness and well-being, two personality characteristics related to arousal, and two related to control. In doing so, it explained how these personality differences arise and what implications they have for motivation, emotion, and everyday life.

Two personality characteristics related to happiness are extraversion and neuroticism. The personality characteristic that explains "Who is happy?" is extraversion. Extraverts are happier than are introverts. Extraverts are happy because they have a stronger behavioral activating system

(BAS) that makes them highly responsive to signals of reward in the environment. The personality characteristic that explains “Who is unhappy?” is neuroticism. Neurotics suffer emotionally. They do so because they have a stronger behavioral inhibition system (BIS) that makes them highly responsive to signals of punishment in the environment.

Extraversion predisposes the individual toward a positive emotionality, the behavioral activation system, and an approach temperament. Neuroticism predisposes the individual toward a negative emotionality, the behavioral inhibition system, and an avoidance temperament. When extraverts enter a situation, their BAS predisposes them to be particularly sensitive to its potentially rewarding aspects and thus they experience positive emotions and show approach-oriented behavior. When neurotics enter a situation, their BIS predisposes them to be particularly sensitive to its potentially punishing aspects and thus they experience negative emotions and show avoidance-oriented behavior.

Sensation seeking and affect intensity represent two personality characteristics related to arousal and to the inverted-U curve of arousal, performance, and emotion/mood. Sensation seeking is the need for varied, novel, complex, and intense sensations and the willingness to take physical, social, legal, and financial risks for the sake of such experiences. To attain such sensations, sensation seekers seek new experiences, as in sex and drugs, and they engage in risk-accepting behavior, as in gambling. Affect intensity represents the strength with which individuals typically experience their emotions. Affect-intense individuals experience emotions strongly and show emotional hyperactivity in emotion-eliciting situations. Affect-stable individuals experience their emotions only mildly and show only minor fluctuations in their emotional reactions.

Perceived control and the desire for control represent two personality characteristics related to control. Perceived control concerns the capacity to initiate and regulate the behavior needed to gain desirable outcomes and to prevent undesirable ones. When perceived control is strong, people engage in tasks with active coping and positive emotion, and this on-task engagement increases the probability that they will attain the outcomes they seek. But when perceived control is weak, people engage in tasks in only half-hearted ways as they show passivity and negative emotion. This disaffection, in turn, decreases the probability that they will attain the outcomes they seek. Thus, by affecting engagement, perceived control beliefs initiate a self-confirming cycle in which people with high perceived control initiate the effort that produces the positive outcomes that, in turn, increases subsequent perceptions of high control. Desire for control reflects the extent to which people are motivated to control the events in their lives. High-DC individuals approach situations by wanting to control what happens to them, so they strive to establish control and to restore it when control is lost or threatened. To establish control, high-DC individuals embrace high standards and aspirations, put forth high effort when challenged, overly persist at difficult tasks, and interpret success/failure feedback in a self-serving and control-enhancing way. When control is threatened or lost, as in visiting the dentist, entering a crowded room, or participating in a learned-helplessness experiment, high-DC individuals exhibit distinct reactions such as distress and depression.

READINGS FOR FURTHER STUDY

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Chapter 14

Unconscious Motivation

PSYCHODYNAMIC PERSPECTIVE

- Psychoanalytic Becomes Psychodynamic
- Dual-Instinct Theory
- Drive or Wish?
- Contemporary Psychodynamic Theory

THE UNCONSCIOUS

- Freudian Unconscious
- Adaptive Unconscious
- Implicit Motivation
- Subliminal Motivation

PSYCHODYNAMICS

- Repression
- Suppression
- Do the Id and Ego Actually Exist?

EGO PSYCHOLOGY

- Ego Development
- Ego Defense
- Ego Efficacy

OBJECT RELATIONS THEORY

CRITICISMS

SUMMARY

READINGS FOR FURTHER STUDY

Imagine accompanying your friend on his visit to a psychiatrist. To begin the session, your friend undergoes hypnosis. Once hypnotized, the psychiatrist suggests that your friend brought a newspaper with him to the session and that once he awakes, he will want to read it. In actuality, your friend brought no newspaper. Furthermore, the therapist suggests that upon his awakening, he will look for the newspaper but will be unable to find it. The therapist tells your friend that, after a couple of minutes of searching, an idea

will occur to him that another person has taken his newspaper—that the other person has, in fact, stolen it. The therapist also suggests that your friend’s discovery will provoke him to anger. Furthermore, the therapist tells your friend to direct that anger toward the thief. Unfortunately for you, the psychiatrist next tells your friend that you are that thief. The therapist tells your friend that, in his fit of anger, he will first insist and will then demand that you return his newspaper. To conclude the hypnosis session, the psychiatrist tells your friend that he will forget that the source of all this (mis)information was actually a series of suggestions given to him by the therapist.

Your friend awakens. He begins to chat leisurely and cheerfully about the day’s events, and then remarks, “Incidentally, that reminds me of something I read in today’s newspaper. I’ll show you.” Your friend looks around, does not see his newspaper, and begins to search for it. You begin to feel a hint of anxiety because you have been with your friend all day and know that he has neither read nor purchased a paper. Then, suddenly, he turns toward you with piercing eyes. Accusingly, your friend announces that you took his newspaper, and he now wants it back. You are starting to think coming along was not such a good idea and rather sheepishly say that you know nothing of the newspaper. But your friend persists. He is truly upset. With his anger piqued, your friend forcefully accuses you of stealing his newspaper. He goes further, saying that you took it because you are too cheap to buy one of your own. To substantiate his accusation, he says someone saw you steal his newspaper and told him about it.

This is no longer funny. Your friend *really* believes you stole his newspaper, and he *really* wants it back.

What does this hypnosis session illustrate (based on Fromm, 1941)? The scenario illustrates that human beings can have thoughts, feelings, and emotions that subjectively feel to be their own but, in fact, have been introjected from another source. Your friend wanted something—to show you an item in the newspaper. He thought something—you stole his newspaper. And he felt something—anger against an alleged thief. But your friend’s wants, thoughts, and feelings were not his own in the sense that they did not originate within him. Yet, your friend surely acted as if they were his own. Such a demonstration of the posthypnotic suggestion testifies to the paradox that while we can be sure of what we want, think, and feel, we can also have little idea as to the source of what we want, think, and feel. The whole scenario bears witness to the idea that motivation can arise from a source that lies outside of conscious awareness and volitional intent.

PSYCHODYNAMIC PERSPECTIVE

In contrast to humanism (Chapter 15), the psychodynamic approach presents a largely deterministic and pessimistic image of human nature. Psychoanalysis is deterministic in that it holds that the ultimate cause of motivation and behavior derives from biologically endowed and socially acquired impulses that determine our desires, thoughts, feelings, and behaviors, whether we like it or not. Psychoanalysis is further deterministic in that personality changes little after puberty. Thus, many of the motivational impulses of an adult can be traced to events that took place in childhood. Motivation comes across as something that happens to us, rather than as something one chooses or creates. Psychoanalysis is also relatively pessimistic in tone, as it places the spotlight on sexual and aggressive urges, conflict, anxiety, repression, defense mechanisms, anxiety, and a host

of emotional burdens, vulnerabilities, and shortcomings of human nature. It sees anxiety as inevitable and the collapse of personality as a matter of degree rather than as an exceptional event that happens to only some of us. We are all dogged by guilt, anxiety is our constant companion, narcissism and homophobia are common, and distortions of reality are *modus operandi*. It is not a pretty picture, Freud said, but it is reality nonetheless. In his mind, Freud was not a pessimist; he was a realist.

Psychoanalysis is strangely appealing and wonderfully popular. Part of its appeal is that, in reading psychoanalytic theory, the reader comes face to face with some difficult aspects of human nature. According to psychoanalysis people “are more interested in getting sexual pleasure than they will admit” and people have “blind rages, wild lusts, and parasitic infantile longings” (Holt, 1989). These difficult, mysterious aspects of human nature present us with a psychological riddle that pulls in our curiosity. Who can resist wanting to learn more about a theory that reveals the secrets of the mind—secret crushes and jealousies, fantasies and desires, memories of things done and not done, and all sorts of hidden intrigue and despair?

Part of the appeal of psychoanalysis is that it makes the unconscious its subject matter. Thus, psychoanalysis willingly goes “where no theory has gone before” (to paraphrase *Star Trek*)—into dreams, hypnosis, inaccessible memories, fantasy, and all the hidden forces that shape our motives and behaviors without our awareness and without our consent. In doing so, psychoanalysis offers a chance to talk about a deeply interesting subject matter—the content of our own private subjective experience and why unwanted desires and fears make their home there.

Psychoanalytic Becomes Psychodynamic

Decades ago, the terms psychoanalytic and psychodynamic could be used as synonyms. A growing number of scholars, however, found themselves in the uncomfortable position of accepting Freud’s ideas about unconscious mental processes but rejecting some of his other ideas, such as his dual-instinct theory of motivation (discussed next). Today, the term psychoanalytic refers to practitioners who remain committed to most traditional Freudian principles, whereas the term psychodynamic refers to the study of dynamic unconscious mental processes. In other words, one can study unconscious mental processes (e.g., prejudice, depression, thought suppression, defense mechanisms) inside or outside the Freudian tradition. That is, many researchers study psychodynamic processes without embracing the psychoanalytic approach. The present chapter is, accordingly, about psychodynamic unconscious motivation and not necessarily about traditional Freudian principles. But to understand the foundation of the psychoanalytical perspective, the chapter begins where Freud began his study of motivation—namely, with his controversial dual-instinct theory.

Dual-Instinct Theory

A physician by training, Sigmund Freud viewed motivation as regulated by impulse-driven biological forces. The human body was seen as a complex energy system organized for the purpose of increasing and decreasing its energies through behavior. Some behaviors increased bodily energy (eating, breathing), and some behaviors

depleted energy (working, playing). Some bodily energy was mental energy, and the mind needed mental energy to perform its functions (e.g., thinking, remembering). The mind received this psychic energy from the body's physical energy. The source of all physical energy was biological drive (or instinct), which was a biologically rooted force "emanating within the organism and penetrating to the mind" (Freud, 1915). Hence, instinctual bodily drives explained the source of all motivation.

For Freud, there were as many biological drives as there were different bodily demands (e.g., food, water, sleep). But Freud recognized that there were too many different bodily needs to list. Instead of compiling a taxonomy of bodily drives, Freud (1920, 1927) emphasized two general categories: instincts for life and instincts for death.

The first class of instincts—Eros, the life instinct—are the more easily defined of the two. Eros instincts maintain life and ensure individual and collective (species) survival. Thus, instincts for food, water, air, sleep, and the like all contribute to the life and survival of the individual. These are instincts for self-preservation. Instincts for sex, nurturance, and affiliation contribute to the life and survival of the species, a reproductive emphasis Freud borrowed from Darwin (Ritvo, 1990). These are instincts for species preservation. In his discussions of the life instincts, Freud (1917) gave primary emphasis to sex, though he conceptualized sex quite broadly as "pleasure seeking" (including thumb-sucking, being tickled, being rocked, being caressed, being tossed in the air, rhythmic stimulation, masturbation, and sexual contact).

The second class of instincts—Thanatos, the death instincts—push the individual toward rest, inactivity, and energy conservation. An absence of any bodily disturbance could be achieved only through total rest, which was death. In discussing the death instincts, Freud gave primary emphasis to aggression. When focused on the self, aggression manifests itself in self-criticism, sadism, depression, suicide, masochism, alcoholism, drug addiction, and unnecessary risk taking such as gambling. When focused on others, aggression manifests itself in anger, hate, prejudice, verbal insult, cruelty, rivalry, revenge, murder, and war. For example, a hostile joke about an ethnic group represented an expression of the Thanatos (Freud, 1905).

These bodily based instinctual drives toward life and death—sex and aggression—provide the energy to motivate behavior. But people did not just impulsively act on their inborn sexual and aggressive energies. Instead, the individual learned from experience to direct his or her behavior toward need-satisfying aims. Through experience, which is a synonym for "psychosexual development" or "personality," the individual learns defensive reactions for managing her sexual and aggressive energies. One's habitual, learned manner of defense is what Freud meant by the ego. Thus, instinctual drives provide the energy for behavior, while the ego provides its direction—attain biological (instinctual) satisfaction in the most socially appropriate and in the least anxiety-provoking way.

Drive or Wish?

The dual-instinct theory of motivation represents psychoanalysis, circa 1930. Times have changed, and progress has been made. Few contemporary psychoanalysts understand motivation as a function of the dual-instinct theory (Kolb, Cooper, & Fishman, 1995; Westen, 1991), and this has been true for several decades (Berkowitz, 1962).

Unlike hunger and thirst, neither sex nor aggression conform to a physiological model of drive. For instance, notice how poorly an analysis of aggression would fit into the cyclical pattern of homeostasis depicted earlier in Figure 4.1: Homeostasis → need → drive → goal-directed behavior → consummatory behavior → return to homeostasis. Physiological deprivation rarely produces aggressive urges, and the urge to aggress does not intensify with the passage of time. Furthermore, consummatory behavior typically fuels and intensifies, rather than satiates and quiets, aggressive desires. Because sex and aggression are so central to Freud's view of motivation and because sex and aggression fit the drive conceptualization so poorly, contemporary psych analysts drop the idea of the instinctual drive as their central motivational construct (Holt, 1989).

As a substitute motivational principle, sex and aggression are conceptualized as psychological wishes, rather than as physiological drives (Holt, 1989; Klein, 1967). The reformulated "wish model" is essentially a discrepancy theory of motivation (see Chapter 8) and proposes the following: At any time, individuals are aware, consciously or unconsciously, of their present state and, on encountering almost any situation, perceive some more potentially desirable state. For example, a man goes about his daily affairs without any aggressive urge but, upon being insulted, demeaned, dissed, or ridiculed, perceives a potentially more favorable social status than his lowly present one. Consequently, a "present state" versus "ideal state" mismatch occurs, and the aggressive wish arises as motivation to move the present state closer to the ideal state. Contemporary psychoanalysts now propose that psychological wishes, not instinctual drives, regulate and direct human behavior (Holt, 1989). The wish retains all the spirit of Freudian motivation as people wish constantly for ideal states in the sexual and aggressive realms, but it overcomes the contradictory evidence that sex and aggression do not function as physiological drives.

The goal of psychoanalytic therapy has always been to understand the confusing activities of the unconscious and therefore free the ego to deal with reality. To do so, contemporary psychodynamic therapists focus more and more on cognitive and interpersonal forces, and less and less on biological and intrapersonal forces (Wegner, 1989; Westen, 1998). Contemporary psychodynamic therapists and researchers do not write much about ids and egos, and they do not spend most of their time undertaking archaeological-like expeditions in search of lost memories that will lead to a discovery of the patient's present-day psychopathology (Kolb et al., 1995; Mitchell, 1988; Wachtel, 1993; Westen, 1998). Instead, the contemporary focus is decidedly interpersonal as it centers on helping people recognize, improve upon, or outright run away from problematic interpersonal relationships (Hazan & Shaver, 1987; Loevinger, 1976; Scharff & Scharff, 1995; Westen et al., 1991). For example, a common problem in psychodynamic therapy is recognizing and developing the skills necessary to overcome the chronic tendency to involve oneself in intimate relationships with the wrong kind of person (Greenberg & Mitchell, 1983; Westen et al., 1991).

Contemporary Psychodynamic Theory

Basically, a lot has changed since Freud. Today, four postulates define psychodynamic theory (Westen, 1998). That these principles are contemporary, as opposed to classically Freudian, is important for two reasons. First, psychodynamic thought has had time to put Freud's insightful propositions to empirical tests to see which postulates do, and which

postulates do not, stand the objective tests of time and empirical evaluation. Second, most readers will be more familiar with Freud's classical psychoanalysis than they will be with what contemporary psychodynamic theory embraces, a fact that makes it necessary to review the following core postulates (Westen, 1998):

1. *The Unconscious.* Much of mental life is unconscious.
2. *Psychodynamics.* Mental processes operate in parallel with one another.
3. *Ego Development.* Healthy development involves moving from an immature, socially dependent personality to one that is more mature and interdependent with others.
4. *Object Relations Theory.* Mental representations of self and others form in childhood that guide the person's later social motivations and relationships.

The first postulate emphasizes the unconscious. It argues emphatically that thoughts, feelings, and desires exist at the unconscious level. Thus, because unconscious mental life affects behavior, people can behave in ways that are inexplicable, even to themselves.

The second postulate emphasizes psychodynamics. It argues that motivational and emotional processes frequently operate in parallel with one another—people commonly want and fear the same thing at the same time. It is the rule, not the exception, that people have conflicting feelings that motivate them in opposing ways. Hence, people commonly harbor divergent conscious and unconscious racial (Fazio, Jackson, Dunton, & Williams, 1995) and gender (Banaji & Hardin, 1996) attitudes that produce simultaneous approach and avoidance behavior. That is, a person can be both highly prejudiced (unconsciously) and not at all prejudiced (consciously) at the same time.

The third postulate emphasizes ego development. While recognizing the motivational significance of sexual and aggressive energies, ego psychologists focus on how we grow, develop, and leave behind our relatively immature, fragile, egocentric, and narcissistic beginnings in life to become relatively mature, resilient, empathic, and socially responsible beings.

The fourth postulate highlights object relations theory. It argues that stable personality patterns begin to form in childhood as people construct mental representations of the self and others. Once formed, these beliefs about self and others shape enduring patterns of motivation (relatedness, anxiety) that guide the quality of the adult's interpersonal relationships.

THE UNCONSCIOUS

Scientific psychology has had a difficult time with the empirical exploration of the unconscious. After all, if the unconscious is hidden from both private consciousness and public observation, then how can a researcher ever gain access to it? This problem is not an insurmountable one, however, any more than concepts such as electrons are insurmountable to those who study physics. Like unconscious mental processes, electrons, velocity, and the expanding universe are also difficult, but not impossible, to measure and to study scientifically.

Freud believed that the individual must express strong unconscious urges and impulses, though in a disguised form. The unconscious is therefore a “shadow

phenomenon” that cannot be known directly but can be inferred only from its indirect manifestations (Erdelyi, 1985). Believing the unconscious constituted the “primary process” while consciousness was but a “secondary process,” Freud and his colleagues explored the contents and processes of the unconscious in a number of ways, including hypnosis, free association, dream analysis, humor, projective tests, errors and slips of the tongue, and so-called “accidents” (Exner, 1986; Freud, 1905, 1914, 1920, 1927, 1932; Murray, 1943).

It has been a rocky and emotionally charged 100-year debate, but the conclusion that much of mental life is unconscious is now largely accepted as true (Westen, 1998). The idea that people have motives and intentions that lie outside of their everyday awareness is readily accepted by motivation researchers (Bargh & Chartrand, 1999; Wegner, 1994). Instead of debating whether some of mental life is unconscious, the debate now centers on three different portrayals of the unconscious. The three views can be called the Freudian unconscious, the adaptive unconscious, and implicit motivation. Just as Freud used methods such as hypnosis and slips of the tongue, modern-day psychologists use methods such as subliminal activation, priming, selective attention, unconscious learning, and implicit memory to study various aspects of the non-Freudian unconscious (Greenwald, 1992; Kihlstrom, 1987).

Freudian Unconscious

The division of mental life into what is conscious and what is unconscious is the fundamental premise of psychoanalysis (Freud, 1923). Freud rejected the idea that consciousness was the essence of mental life and therefore divided the mind into three components: conscious, preconscious, and unconscious. The conscious (i.e., “short-term memory” or “consciousness”) includes all the thoughts, feelings, sensations, memories, and experiences that a person is aware of at any given time. The preconscious stores all the thoughts, feelings, and memories that are absent from immediate consciousness but can be retrieved into consciousness with a little prompting (e.g., you are aware of but are not currently thinking about your name or what color ink these words are printed in). The most important, and by far the largest, component of mental life is the unconscious. The unconscious is the mental storehouse of inaccessible instinctual impulses, repressed experiences, childhood (before language) memories, and strong but unfulfilled wishes and desires (Freud, 1915, 1923).

To illustrate the Freudian view of the unconscious, consider unconscious activity during dreaming. For Freud, daily tensions continually mounted in the unconscious and were vented during dreaming. Because dreams vent unconscious tensions, dreams provided an opportunity for accessing the unconscious’ wishful core. Assuming that the person could recall his or her dreams, dream analysis began by asking the individual to report a dream’s storyline and ended with the therapist’s interpretation of the underlying meaning of the dream. A dream’s storyline represents its manifest content (its face value and defensive facade), while the symbolic meanings of the events in the storyline represent its latent content (its underlying meaning and wishful core). Because the explicit expression of unconscious wishes would be anxiety-provoking and ego-threatening (and would awaken the dreamer), the unconscious expresses its impulses through the latent and symbolic, rather than the obvious and manifest.

As one illustration, consider the following dream reported by one of Freud's patients (Freud, 1900):

A whole crowd of children—all of her brothers, sisters, and cousins of both sexes—were romping in a field. Suddenly, they all grew wings, flew away, and disappeared.

The patient first had this dream as a young child and continued to have this same dream repeatedly into adulthood. In the dream, all of the patient's brothers, sisters, and cousins flew away and she alone remained in the field. According to Freud, the dream does not make much sense at the manifest level, and to gain an understanding of its meaning and significance, the analysis must take place within the latent content, using the technique of free association. At the latent level, the dream is (for this particular person) a death wish from the Thanatos. According to Freud, the dreamer is wishing that her brothers, sisters, and cousins would all sprout wings and fly away like a butterfly (a child's view of the soul leaving the body upon death), leaving her to the full attention and affection of her parents.

Before we can conclude that dreams function to vent unconscious wishes, however, we must acknowledge what contemporary research has discovered since Freud. In addition to serving a venting function, dreams serve (1) *neurophysiological activity* in that the brain stem (not unconscious wishes) produces random neural input for the neocortex to process and make sense of (Crick & Mitchison, 1986); (2) a *memory consolidating function* as memories of the day are moved from short-term into long-term memory (Greenberg & Perlman, 1993); (3) a *stress-buffering or coping function* by providing an opportunity to pair defense mechanisms against threatening events such as job stress (Koulack, 1993); and (4) a *problem-solving function* in that, during dreaming, people process information, organize ideas, and arrive at creative constructions for solving their problems (Wilson, 1992). While some evidence supports the idea that dreams provide an outlet for venting wishes and tensions (Fisher & Greenberg, 1996) and that nightmares are associated with anxiety symptoms (Levin & Nielsen, 2007), it is also true that Freud's concept of the dream was too limited. Dreams express unconscious wishes, but dreams are also neurophysiological, cognitive, coping, and problem-solving events that have little to do with unconscious wishes (Fisher & Greenberg, 1996; Levin, 1990; Moffitt, Kramer, & Hoffman, 1993).

Adaptive Unconscious

The empirical study of the non-Freudian unconscious began with a patient with epilepsy. Because of his seizures, he had his hippocampus removed and, as a result, had amnesia. He was brought into a laboratory for several consecutive days to practice a motor skill. As he walked into the laboratory each new day, he had absolutely no memory of being there before, no memory of the people who worked there, and no memory of the motor skill he practiced each day. Still, he showed rather marked improvement in the motor skill day after day. This experiment suggested the existence of an adaptive unconscious.

In his popular book, *Stranger to Ourselves*, Timothy Wilson (2002) described the nature of the adaptive unconscious through the analogy of an airplane. Most of the time, the pilot just puts the plane on automatic pilot. On automatic pilot, the plane does a fine job of attending to its environment, initiating efficient action, setting goals, and keeping

a mechanical eye out for signals of danger. Every once in a while, the pilot breaks in to make an intentional change or adjustment. The adaptive unconscious runs on automatic pilot as it carries out countless computations and innumerable adjustments during acts such as tying your shoes, driving a car, or playing the piano (Greenwald, 1992).

The adaptive unconscious is very good at what it does (appraise the environment, set goals, make judgments, and initiate action, all while we are consciously thinking about something else). It performs routine activities well, such as enacting procedural knowledge (the “how-to knowledge” underlying motor skills), recognizing events as familiar or not (Roediger, 1990), and acquires the sort of implicit knowledge we gain as when we listen to and remember music. But it has special talents as well. As one case in point, consider the experiment in which college students were shown only a 2-second muted video clip of an instructor and asked to rate his or her teaching effectiveness based on what they saw in that slice of action (Ambady, Bernieri, & Richeson, 2000). Ratings were also taken from the students of these same instructors who had taken a semester-long course. Students who saw only the quickest slice of the instructor’s teaching made just as valid judgments of the instructor’s effectiveness as did students who spent 4 months in the classroom with the same instructor. These students could not tell you why they made the ratings they did, but their intuition told them something important about how effective or ineffective each instructor was likely to be. People are also able to make accurate judgments of other people’s emotions with only a micro-second of exposure to the person’s facial expressions, despite the fact that they cannot tell you what piece of information they are using to make such judgments (Ekman, 1993). The judgments made by the adaptive unconscious often turn out to be right (Gladwell, 2005).

Implicit Motivation

The best way to introduce the concept of implicit motivation is to contrast it with conscious motivation. Implicit motivation refers to all those motives, emotions, attitudes, and judgments that operate outside a person’s conscious awareness and that are fundamentally distinct from self-report motives, emotions, attitudes, and judgments (McClelland, Koestner, & Weinberger, 1989). Motivational constructs such as plans, goals, intentions, self concept, and attributions represent a conscious, self-report, “explicit” type of motivation. “Implicit,” in contrast, describes motivational processes that are indirect, implied, or not well understood. Unconscious implicit motives are difficult to articulate (difficult to measure with self-report questionnaires) and therefore need to be measured indirectly (Schultheiss & Pang, 2007).

Whereas explicit motives are those linked with learned values and cognitively elaborated aspects of the self-concept (e.g., “I like difficult tasks”; “It is important to persist in the face of difficulty”), implicit motives are linked to emotional experiences. The social needs reviewed in Chapter 7 illustrated implicit motivations well (e.g., needs for achievement, affiliation, intimacy, and power). When we actually encounter difficult tasks and when we have an opportunity to persist versus quit in the face of difficulty, we experience emotion and affect that predicts our resulting behavior rather well. That is, during difficulty and challenge we feel good and energized or we feel bad and anxious, and these emotional reactions (rather than our conscious values) predict behavior well.

Implicit motives orient, direct, and select attention such that people automatically attend to environmental events that have emotional associations (McClelland, 1985; Schultheiss & Hale, 2007). That is, those who harbor positive affect associated with achievement orient, direct, and select their attention when the environment offers them an opportunity to do something well and to show personal competence. Similarly, those who harbor positive affect associated with power orient, direct, and select their attention when the environment offers them an opportunity to have an impact on others (recall Table 7.2).

Whether implicit motivational processes predict behavior depends on the degree to which individuals exercise awareness of the events going on around them that affect their motivation and how they respond to these events in terms of thoughts, emotions, and behavior (Bargh, 1997). Hence, mindfulness explains when implicit motives affect behavior, while mindlessness explains when implicit motives fail to affect behavior (Levesque & Brown, 2007). Mindfulness is a receptive attention to and awareness of present events and experiences; it is a noninterference with one's experience in which the person allows inputs to enter awareness in a simple noticing of what is taking place (Brown & Ryan, 2003). With the emotional activation of implicit motivation and with the openness of high mindfulness, people are able to regulate their behavior in implicit and productive ways (Brown, Ryan, & Creswell, 2007). This is an important point to make because it shows how conscious and unconscious motivation can potentially work together in a harmonious and productive way (rather than as opposing id versus ego forces).

Subliminal Motivation

To subliminally activate unconscious information, a stimulus is presented at a very weak energy level (or for only a very brief duration of time) to an unsuspecting research participant. For instance, while the person looks through a tachistoscope, the phrase "Mommy and I are one" appears for 4 milliseconds, which is much too brief a time for anyone to report actually seeing anything, much less read, recognize, and comprehend the message. All three conceptualizations of the unconscious (Freudian, adaptive, and implicit) agree that the information does get processed at an unconscious level. Participants given an extremely brief exposure to "Mommy and I are one" do subsequently experience positive affects, including lessened anxiety and heightened positive emotionality (Hardaway, 1990; Silverman & Weinberger, 1985).

Consider also the sort of subliminal information processing made popular in the 1960s when a marketing executive superimposed briefly flashed messages—"Eat popcorn" and "Drink Coke"—over a film shown at a local theater. Popcorn sales exploded (Morse & Stoller, 1982). Marketers have been trying to send subliminal messages into the minds of the unsuspecting masses ever since, as with department stores' anti-shoplifting subliminal messages broadcast over the public address system ("If you steal, you will get caught"; Loftus & Klinger, 1992). But researchers have tested whether people act on subliminal messages and found that people do not. People do not behave in ways consistent with the subliminal directive. The unconscious might recognize and understand the message in some way, but actually acting on the directive is a whole different matter.

One group of researchers tested the validity of widely available subliminal audiotapes designed to enhance memory or boost self-esteem (Greenwald, Spangenberg, Pratkanis, & Eskenazi, 1991). The audiotapes play subliminal messages (e.g., “You’re the best”; “I love you”) over relaxing material (e.g., popular music, nature sounds of the forest) to improve the daily listener’s self-esteem. The researchers recruited college-age volunteers who wanted to increase their self-esteem or improve their memory. Each volunteer completed initial measures of their self-esteem and memory, listened daily to the audiotape for 5 weeks, and completed follow-up measures of their self-esteem and memory. In a nutshell, results showed that the audiotape did not work. Like the “Eat popcorn” and “If you steal, you will get caught” messages, the “I love you” subliminal messages were not processed in a way that affected thoughts or behaviors (Greenwald et al., 1991).

PSYCHODYNAMICS

Freud observed that people often engaged in behavior that they clearly did not wish to do (e.g., ritualized hand washing). Because people sometimes did what they did not want to do, he reasoned that motivation must be more complex than that which follows intentional volition. Conscious volition must have to wrestle with an unconscious counterwill. Following this line of reasoning Freud (1917) conceptualized people as being of two minds: “The mind is an arena, a sort of tumbling-ground, for the struggle of antagonistic impulses.” People have ideas and wills, but people also have counterideas and counterwills. When the conscious (ego’s) will and the unconscious (id’s) counterwill are of roughly equal strength a sort of internal civil war ensues in which neither is completely satisfied. The mental combatants can be diagrammed as follows:

Will → ← Counterwill

Freud’s depiction of the human mind was one of conflict—idea versus counteridea, will versus counterwill, desire versus repression, excitation versus inhibition, and cathexis (sexual attraction) versus anticathexis (guilt). This clashing of forces is what is meant by the term *psychodynamics*.

For Freud, psychodynamics concerned the conflict between the personality structures of the id and ego (and superego, which is not discussed here). The motivations of the id were unconscious, involuntary, impulse-driven, and hedonistic, as the id obeyed the pleasure principle: Obtain pleasure and avoid pain and do so at all costs and without delay. The motivations of the ego were partly conscious and partly unconscious, steeped in defenses, and organized around the delay of gratification, as the ego obeyed the reality principle: Hold pleasure seeking at bay until a socially acceptable need-satisfying object can be found. Today, psychoanalysts point out that wishes, fears, values, goals, emotions, thoughts, and motives are never in harmony, and mental conflict is an inevitable constant (e.g., one wants and fears the same thing, as during a job interview, a marriage proposal, or in contemplating attending tomorrow’s college class in motivation). As a case in point, Drew Westen (1998) points out that children’s feelings toward their parents almost *have* to be riddled in conflict since parents provide not only security, comfort, and love but also frustration, distress, and disappointment.

Repression

When most readers think of psychodynamics, what comes to mind are concepts like the id, ego, libido, and the Oedipal complex (Boneau, 1990). But, when Freud himself defined psychodynamics, the central concept was repression (Freud, 1917).

Freud envisioned the unconscious as an overcrowded apartment and the conscious as a reception room to prepare oneself for going out into the public world. Repression is the security guard checking each thought's identification card to judge whether it was fit to enter the public world. Because many motivations reside in the unconscious, people necessarily remain unaware of their own motivations. In addition, people go out of their way to remain unaware of these motivations. They do this because they cannot bear to know things about themselves that contradict either their self-view or public opinion. Awareness of one's true motives would generate conflict with either the ideal self or what society regards to be a respectable person. Thus, repression—the tough-minded security guard who turns down most unconscious thoughts' request to exit the overcrowded apartment—constituted the foundation of psychodynamics (Fromm, 1986).

Repression is the process of forgetting information or an experience by ways that are unconscious, unintentional, and automatic. It is the ego's psychodynamic counterforce to the id's demanding and distressing wishes, desires, ideas, or memories. When unconscious impulses try to surface, anxiety emerges as a danger signal. It is this anxiety that moves the unconscious mind to repression (Freud, 1959; Holmes, 1974, 1990).

Repression is tremendously difficult to study empirically because you have to ask people about things they do not remember. Studying repression is similar to figuring out whether the light stays on after you close the refrigerator door. Research on repression has not yet produced impressive understandings (Erdelyi, 1985, 1990; Erdelyi & Goldberg, 1979), but research on the related mental control process of suppression has been enlightening.

Suppression

The ability to stop a thought is beyond the human mind. No one can stop a thought. Instead, people try to suppress the thought once it has already occurred. Suppression is the process of removing a thought by ways that are conscious, intentional, and deliberate (Wegner, 1992). Generally speaking, suppression fails.¹ When we try to suppress a thought, all we get for our trouble is a lesson that we have less control over our thoughts than we care to admit (Wegner, 1989). Like a balloon held under water, thoughts and emotions can be suppressed for only a while.

¹Suppressing a thought given by an external source (i.e., another person) is that which lies beyond the capacity of the human mind to suppress. People's own, self-generated intrusive thoughts are a different story (Kelly & Kahn, 1994). The number-one strategy that works with self-generated intrusive thoughts is distraction (Wegner, 1989). With familiar intrusive thoughts, people generally have a rich network of thoughts they have used previously to distract themselves from their unwanted thoughts (Kelly & Kahn, 1994). But a psychodynamic rebound effect always occurs when thoughts are generated by an outside agent, like an experimenter saying not to think of a white bear (Wegner et al., 1987) or a friend asking you to keep a secret (Lane & Wegner, 1995). With externally induced intrusive thoughts, people lack the experience they need to suppress them.

Consider the psychodynamics of the following:

- Do not *think* about something.
(Try not to think about today's dental appointment.)
- Do not *do* something.
(Try to go all day without smoking a cigarette.)
- Do not *want* something.
(Try not to want food while on a diet.)
- Do not *remember* something.
(Try to forget about a deeply humiliating experience.)

When such thoughts enter our consciousness, our thinking halts itself because the thought precedes something that we wish not to happen. That is, the self-instruction of "don't think about that candy bar" precedes the undesired act of eating the candy bar. With the stream of thought interrupted—halted, in fact—the unwanted thought lingers out there in consciousness all by itself with a spotlight on it. We can suppress that thought for a few seconds or perhaps even for a few minutes, but there is a curious tendency for that thought to pop up again (Wegner 1989; Wegner, Schneider, Carter, & White, 1987).

Consider a laboratory experiment in which college students were asked not to think of a white bear (Wegner et al., 1987). Each participant sat alone at a table with a bell on it (like the old-fashioned umbrella-shaped bells seen on hotel counters). For the first 5 minutes, the participant said whatever popped into mind. "Free association" was easy. For the next 5 minutes, however, the participant was asked explicitly not to think of a white bear, but if she did think of the bear, she was to ring the bell as a signal that the unwanted thought had accidentally popped into her mind. The attempt at thought suppression was very difficult. A lot of bell ringing occurred. During a final 5-minute period, the participant once again was to say whatever popped into mind (i.e., free association). In this last period, participants experienced a "rebound effect" in which the thought of the white bear preoccupied their attention. Bell ringing sounded like a hotel desk at check-out time.

These results contradict common sense. Thought suppression not only failed, but it produced an obsessive preoccupation about those white bears (the rebound effect). Thought suppression paradoxically opened the door to thought obsession.

People rely on thought suppression to control their thoughts and actions in practically all areas of life. People rely on thought suppression for behavioral self-control, as in the effort to abstain from eating certain foods (Polivy & Herman, 1985) or consuming addictive substances (Marlatt & Parks, 1982). People rely on thought suppression to keep a secret (Pennebaker, 1990) or to deceive another person (DePaulo, 1992). People rely on thought suppression for self-control over pain (Cioffi, 1991) and fear (Rachman, 1978). And people use thought suppression to avoid making public the inner workings of their mind and its socially offensive wants, desires, and intentions (Wegner & Erber, 1993). People basically rely on thought suppression for seemingly good reasons. Many of our private thoughts would produce public confusion (to put it nicely) if they were allowed to be freely expressed. Thought suppression turns potential social conflict into a private mental struggle of wanted versus unwanted thoughts (Wegner, 1992). We learn quickly that thought suppression can be a social ally in preventing us from just blurting

out our thoughts, as sometimes happens when we are stressed (Jacobs & Nadel, 1985) or impaired by drugs or alcohol (Steele & Josephs, 1990).

All this makes for interesting psychodynamics. An unwanted thought pops to mind, so we suppress it. But conscious thought suppression activates an unconscious counterprocess. While the conscious mind is busy suppressing the unwelcomed thought, the unconscious mind is just as busy searching and detecting for the presence of the thought to be suppressed. The unconscious mind keeps vigilant search over whether or not those white bears have returned. The unconscious monitoring process ironically keeps the to-be-suppressed thought activated, which is the very thing that the conscious intention was trying to avoid. With this psychodynamic process in mind, it makes sense why research shows that the act of suppressing produces an uninvited rebound effect of the unwanted thought. Continued suppression actually, in time, builds a rather potent counterforce that drives the unwanted thought toward an obsession (e.g., the dieter who tries not to think of food is vulnerable to thinking only about food; Polivy & Herman, 1985). According to Dan Wegner (1989, 1992), the way out of the thought suppression quagmire is to stop suppressing and, instead, focus on and think about the unwanted thought. Paradoxically, only those unconscious thoughts that we welcome into consciousness are we able to forget (Frankl, 1960).

Do the Id and Ego Actually Exist?

Given the preceding discussion on psychodynamics, an interesting question arises that asks: What does contemporary empirical research have to say about the scientific status of the id and ego? Is the human brain organized such that part exists as a cauldron of innate and impulsive desires and emotions, while another part exists as an executive control center that perceives the world and learns and adapts to it?

The conscious awareness responsible for executive control over mental life is a relatively new evolutionary development that has been structurally superimposed over a primitive and motivationally rich information-processing system (Reber, 1992). The limbic structures of the brain—the hypothalamus, thalamus, amygdala, medial forebrain bundle, and so on—are commonly referred to as pleasure–unpleasure brain centers. Electrical stimulation of the brain reveals that some limbic areas are pleasure centers (i.e. septum, lateral hypothalamus, medial forebrain bundle), whereas other limbic areas are unpleasure centers (i.e., thalamus, amygdala, medial hypothalamus) (Olds & Fobes, 1981; Stellar & Stellar, 1985; Wise & Bozarth, 1984). The limbic system makes for a pretty fair id. The neocortex qualifies as the brain structure that corresponds to the ego, as it performs all those functions that reflect learning, memory, decision making, and intellectual problem solving. Furthermore, the neural pathways and structures of the neocortex and the limbic systems are intricately interrelated. Unilateral and bidirectional neural interconnections are everywhere (e.g., the amygdala both excites and inhibits the hypothalamus, the amygdala both excites and is inhibited by the neocortex). The picture that emerges corresponds to a pattern of psychodynamics, of forces and counterforces, of excitations and inhibitions, of limbic system activation and neocortical inhibition.

Contemporary neuroscientists further confirm that the emotion-generating amygdala is present at birth while the memory-generating hippocampus matures later. Hence, early

childhood experiences can leave an emotional memory imprint (implicit learning) without a corresponding episodic (conscious) memory.

EGO PSYCHOLOGY

Freud postulated that all psychical energy originated in the id. At birth, the infant was all id, while the ego was only in the beginning processes of formation (Freud, 1923). Throughout infancy, the ego developed from perceiving instincts to curbing them. The id was force; the ego—the personality—developed to fulfill the adaptive role of counterforce.

The neo-Freudians saw ego functioning as much more. Heinz Hartmann 1958, 1964, the “father of ego psychology,” saw the ego involved in a process of maturation that made it increasingly independent from its id origins. For Hartmann, the ego, unlike the id, developed through learning and experience. Learning occurred because the child engaged in a tremendous amount of manipulative, exploratory, and experimental activity (such as grasping, walking, and thinking), all of which provided the ego with information about itself and its surroundings. With feedback from its manipulative, exploratory, and experimental activity, the ego began to acquire ego properties—language, memory, intentions, complex ideas, and so on—that facilitated its ability to adapt successfully to the realities, demands, and constraints of the world. Hartmann conceptualized that because of its ability to learn, adapt, and grow, the mature ego was mostly autonomous from the id. Neo-Freudians studied the motivational dynamics of the “autonomous ego.”

Ego Development

Defining ego is difficult because it is not so much a thing as it is a developmental process. The essence of ego development is a developmental progression toward what is possible in terms of psychological growth, maturity, adjustment, prosocial interdependence, competence, and autonomous functioning (Hartmann, 1958; Loevinger, 1976). From its infantile origins through its progression toward what is possible, the ego unfolds along the following developmental trajectory (Loevinger, 1976):

- Symbiotic
Impulsive
- Self-protective
- Conformist
- Conscientious
- Autonomous

During the (infantile) symbiotic stage, the ego is extremely immature and constantly overwhelmed by impulses. The ego is symbiotic in the sense that its welfare depends on and is wholly provided for by its caretaker, not by itself. With language, the symbiotic ego begins to differentiate itself from the caretaker but remains extremely immature. In the impulsive stage, external forces (parental constraints, rules), and not the ego per se, curb the child's impulses and desires. Self-control emerges when the child first anticipates consequences and understands that rules exist. The ego then internalizes these

consequences and rules in guiding its self-protective defensive capabilities. During the conformist stage, the ego internalizes group-accepted rules, and the anxiety of group disapproval becomes a potent counterforce against one's impulses. The conscientious ego has a conscience, an internalized set of rules, and a prosocial sense of responsibility to others. The conscience functions as a set of internal standards to curb and counter impulses. The autonomous ego is one in which thoughts, plans, goals, and behaviors originate from within the ego and its resources, rather than from id impulses or from other people's (including society's) demands and pressures (Ryan, 1993). The autonomous ego is self-motivating and self-regulating.

Ego development is important to motivation study in two ways. First, the ego develops to defend against anxiety. If the ego is unable to accomplish its task of mediating the demands of the id, superego, and environment, then it experiences anxiety. Anxiety is the emotional reaction in which the ego is "obliged to admit its weakness" (Freud, 1964, p. 78). Strong ego development therefore develops mature defenses against anxiety (as discussed below in the section "Ego Defense"). Second, the ego develops to empower the person to interact more effectively and more proactively with its surroundings. By growing its sense of competence, the ego gains an increasing capacity to deal effectively with environmental challenges and also to generate its own inner motivation and become self-motivating (as discussed below in the section "Ego Effectance").

Ego Defense

The day-to-day existence of the ego is one of vulnerability. The person who walks into class is in a state of vulnerability. The person who goes out on a date is in a state of vulnerability. And the person who tries to learn something new is in a state of vulnerability. The ego is always in a state of vulnerability. Through its defense mechanisms, the ego buffers consciousness against potentially overwhelming levels of anxiety originating from conflict with id impulses (neurotic anxiety), superego demands (moral anxiety), and environmental dangers (realistic anxiety). The role that defense mechanisms play in keeping mental pathology at bay appears in Figure 14.1, which shows that conflict emanating from the environment, id, and superego will rather inevitably create anxiety and, eventually, distress and depression if the conflicts are not defended against. It is the role of the defense mechanisms to play that defensive, protective function. Without the

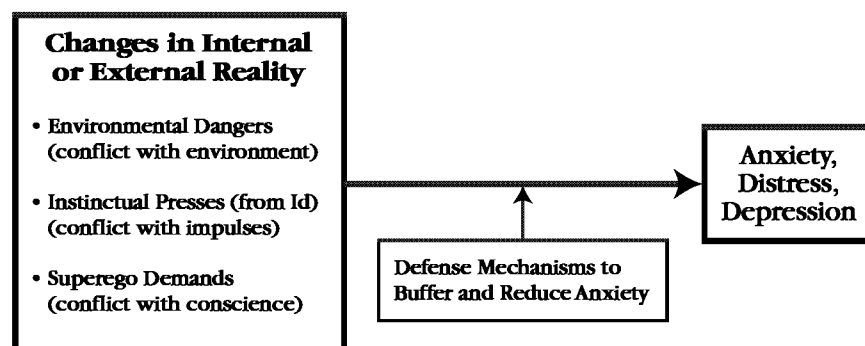


Figure 14.1 Role of Defense Mechanisms in Buffering the Ego from Anxiety-Generating Events

use of defense mechanisms, changes in internal and external reality generate a steady stream of anxieties in our lives. Fourteen such defense mechanisms appear in Table 14.1, along with a definition and example for each (American Psychiatric Association, 1994; A. Freud, 1946; Vaillant, 2000).

Defense mechanisms exist in a hierarchical ordering from least to most mature, from least to most adaptive (Vaillant, 1977, 1992, 1993). At the most immature level, defense mechanisms deny reality or invent an imaginary one. Defense mechanisms such as denial and fantasy are the most immature because the individual fails even to recognize external reality. At the second level are defenses such as projection in which the person recognizes reality but copes by casting its disturbing aspects away from the self. At the third level of maturity are the most common defenses, including rationalization and reaction formation. These defenses deal effectively with short-term anxiety but fail to accomplish any long-term gain in adjustment (because reality is repressed rather than accommodated). Rationalization, for example, temporarily excuses unacceptable desires, but it fails to provide the means for coping with the problem that produced the anxiety in the first place. Level four defenses are the most adaptive and mature and include mechanisms such as sublimation and humor. Sublimation accepts unconscious impulses but effectively channels these impulses into socially beneficial outlets, such as the creative energy that produces a painting or a poem (making unconscious impulses both socially acceptable and personally productive). Humor allows the person to look directly at what is painful or anxiety-provoking and deal with it in a socially acceptable way (Freud, 1905; Vaillant, 2000). Still, like all defenses, humor does not transform reality but instead transforms only the perception of reality (to alleviate subjective distress; Lefcourt & Martin, 1986; Nezu, Nezu, & Blissett, 1988).

To test his ideas that the maturity level of one's defenses reflects ego strength and predicts life adjustment, Vaillant (1977) followed the lives of 56 men over a 30-year period. He interviewed each man in his college-age years, and independent testers classified each man as using predominantly mature (levels 3 and 4) or predominantly immature (levels 1 and 2) defense mechanisms as a personal style against distress and anxiety. The study sought to determine how these two groups of men would fare in life, and the research assessed each man's life adjustment 30 years later in four categories: career, social, psychological, and medical. Ego strength, as indexed by maturity level of defense mechanisms, successfully discriminated men who suffered under the burden of career, social, psychological, and medical problems from those who did not (see Table 14.2). Mature defense mechanisms allowed the men to live a well-adjusted life, show psychosocial maturity, find and keep a fulfilling job, develop a rich and stable friendship pattern, avoid divorce, avoid the need for psychiatric visits, avoid psychopathology and mental illnesses, and so on. A second, similar longitudinal study with both men and women and also with people from more diverse backgrounds showed that the maturity level of one's defenses predicted—30 years later—income level, job promotions, psychosocial adjustments, social supports, joy in living, marital satisfaction, and physical functioning such as the ability to climb stairs during old age (Vaillant, 2000).

One illustration of how mature defense mechanisms promote well-being appears in Figure 14.2 (Cui & Vaillant, 1996). On the horizontal *x*-axis, the graph shows the extent to

Table 14.1 Ego Defense Mechanisms

Defense Mechanism	Definition (with <i>example in italics</i>)
Denial	Unpleasant external realities are ignored or their acknowledgment is refused. <i>Preoccupation with work so there is no attention paid to the messages of rejection coming from a problematic personal relationship.</i>
Fantasy	Gratifying frustrated desires by imaginary and omnipotent achievement. <i>Imagining oneself to be a courageous national hero who performs incredible feats to win the admiration of all.</i>
Projection	Attributing one's own unacceptable desire or impulse onto someone else. <i>The anxiety of "I am failing this course because I am unintelligent" is expressed as "This textbook is stupid" or "The teacher is an idiot."</i>
Displacement	Releasing one's anxiety against a substitute object when doing so against the source of the anxiety could be harmful. <i>Discharging pent-up aggressive impulses against a father figure (the boss) onto a more anxiety-manageable object, such as the household dog. The worker kicks the dog as a substitute for the father figure.</i>
Identification	Taking on the characteristics of someone viewed as successful. <i>Seeing the nation adore a celebrity and then adjusting one's appearance (hair style, mode of dress, walk) to be loved and treated like the celebrity.</i>
Regression	Returning to an earlier stage of development when experiencing stress or anxiety. <i>Using baby talk to gain another's nurturance and sympathy to win an anxiety-provoking argument.</i>
Reaction formation	Adopting or expressing the strong opposite of one's true feelings or motives. <i>Expressing and endorsing strong optimism ("Everything will work out just fine") in the face of the grim realities of world hunger, nuclear war, or interpersonal rejection.</i>
Rationalization	Justifying a disturbing or unacceptable thought or feeling by selecting a logical reason to think or feel that way. <i>Producing an acceptable reason to justify one's hatred for a particular group of people, such as "because they lie and cheat all the time."</i>
Anticipation	Forecasting future danger in small steps so to cope with the danger gradually rather than all in one avalanche. <i>A person anticipates a probable future loss by dealing with the loss one step at a time—making a list of things to do, making a plan, practicing what one will say at different stages of the danger, etc.</i>
Humor	Capacity to not take oneself too seriously, as in accepting one's shortcoming and talking about it in a socially acceptable way. <i>A newspaper editorial cartoon exaggerates an anatomical feature of a high-ranking politician that allows readers to laugh at, yet also feel affection for, the authority figure.</i>
Sublimation	Transforming a socially unacceptable anxiety into a source of energy that produces no adverse consequences and is made socially acceptable—even exciting. <i>Lust or sexual impulses are channeled into love, sexual foreplay, or work that is creative, scientific, or manual.</i>

which adults in the study used mature defense mechanisms (with 5 representing the most mature defense mechanisms). The y-axis plots the study's dependent measure, depression. The diagonal line with the o's shows the depression scores for those adults who lived very stressful lives (poverty, physical disability, loss of a loved one). The four adults with highly stressful lives and immature defense mechanisms were very likely to experience depression (75%), whereas the nine adults with equally stressful lives but mature defense mechanisms were essentially inoculated against depression (0%). Adults who did not live stressful lives did not experience depression (as shown by the straight horizontal line with the x's). Thus, depression occurred when people used immature defenses to cope with life stress. When life was not stressful or when adults used mature defenses, depression was avoided. This same conclusion (mature defenses prevent sickness) was also found in preventing posttraumatic stress disorder after combat (Lee, Vaillant, Torrey, & Elder, 1995).

Table 14.2 Relationship between Maturity of Defense Mechanisms and Life Adjustment

	Predominant Adaptive Style (%)	
	Mature (N = 25)	Immature (N = 31)
Overall Adjustment		
1) Top third in adult adjustment	60%	0%
2) Bottom third in adult adjustment	4%	61%
3) "Happiness" (top third)	68%	16%
Career Adjustment		
1) Income over \$20,000/year	88%	48%
2) Job meets ambition for self	92%	58%
3) Active public service outside job	56%	29%
Social Adjustment		
1) Rich friendship pattern	64%	6%
2) Marriage in least harmonious quartile or divorced	28%	61%
3) Barren friendship pattern	4%	52%
4) No competitive sports (age 40–50)	24%	77%
Psychological Adjustment		
1) 0+ psychiatric visits	0%	45%
2) Ever diagnosed mentally ill	0%	55%
3) Emotional problems in childhood	20%	45%
4) Worst childhood environment (bottom fourth)	12%	39%
5) Fails to take full vacation	28%	61%
6) Able to be aggressive with others (top fourth)	36%	6%
Medical Adjustment		
1) 4+ adult hospitalizations	8%	26%
2) 5+ days sick leave/year	0%	23%
3) Recent health poor by objective exam	0%	36%
4) Subjective health consistently judged excellent since college	68%	48%

N = sample size.

Source: From *Adaptation to Life* (p. 87), by G. E. Vaillant, 1977, Boston: Little, Brown & Company. Copyright 1977 by George E. Vaillant.

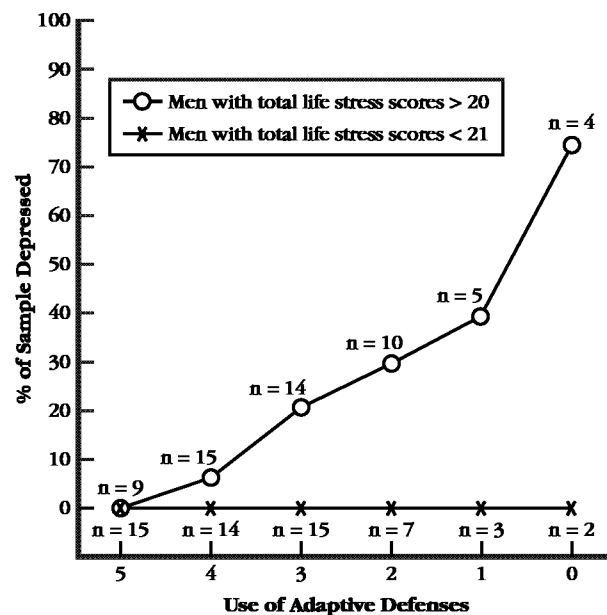


Figure 14.2 Likelihood of Depression as a Function of Life Stress and the Maturity Level of One's Defense Mechanisms

Source: From "The Antecedents and Consequences of Negative Life Events in Adulthood: A Longitudinal Study," by X. Cui & G.E. Vaillant, 1996, *American Journal of Psychiatry*, 152, 21–26. Copyright 1996 American Psychiatric Association. <http://psychiatryonline.org>. Reprinted by permission.

Ego Effectance

Ego effectance concerns the individual's competence in dealing with environmental challenges, demands, and opportunities (Harter, 1981; White, 1959). Effectance motivation begins during infancy as an undifferentiated source of ego energy. With its diffuse energy, properties (e.g., grasping, crawling, walking) and acquired skills (e.g., language, penmanship, social skills), the ego attempts to deal satisfactorily with the circumstances and stressors that come its way. In the process of adapting and developing, the undifferentiated ego energy begins to differentiate into specific motives, such as the needs for achievement, affiliation, intimacy, and power (see Chapter 7). Thus begins the development of a variety of separate ego motivations, but the core ego motivation is effectance motivation, or the desire to interact effectively with the environment (see Chapter 6).

Ego effectance develops into more than just a defensive, reactive coping response to life's demands. As the child exercises skills, he or she begins to learn how to produce successful change in the environment. The child learns how to use crayons, climb trees, cross streets, hold the attention of adults, feed him- or herself, write letters, make new friends, ride a bicycle, and a hundred other tasks. When successful, such interactions produce a sense of being effective, a perception of competence, and feelings of satisfaction and enjoyment. The ego aggregates these perceptions and feelings into a general sense of competence. The greater the ego's effectance motivation, the greater the person's willingness to use ego properties proactively (not just reactively) by intentionally changing the environment for the better. In this sense, ego effectance functions as "ego offense" (to complement "ego defense," discussed in the prior section). With each successful transaction with the environment (a friend is made, a tree house is constructed),

the ego's effectance motivation grows. The greater the effectance motivation, the stronger the desire to seek out new and challenging interactions with the environment.

OBJECT RELATIONS THEORY

The study of unconscious motivation began with a rather single-minded focus on sexual and aggressive drives. Over time, thinking about unconscious motivation became less biological and more interpersonal. Emphasis on the biologic 1 need for sexual gratification, for instance, gradually gave way to an emphasis on the psychological need for relatedness (Horney, 1939). Central to the object relations theory are the infant's need for attachment to the caregiver and the adult's subsequent interpersonal connectedness to the important people in his or her life.

"Object relations" is an awkward term. But the term is less awkward than it might at first appear to be when its etiology is told. Freud used the word "object" to refer to the gratification target of one's drives. Therefore, object relations theory studies how people satisfy their need for relatedness through their mental representations of and actual attachments to social and sexual objects (i.e., other people). Object relations theory studies how people relate to objects (others) to satisfy that emotional and psychological need for relatedness.

Object relations theory focuses on the nature and the development of mental representations of the self and others and on the affective processes (wishes, fears) associated with these representations (Bowlby, 1969; Eagle, 1984; Greenberg & Mitchell, 1983; Scharff & Scharff, 1995; Westen, 1990). In particular, object relations theory focuses on how childhood mental representations of one's caretakers are captured within the personality and persist into adulthood. What persists into adulthood are those mental representations of self and of other significant people (Main, Kaplan, & Cassidy, 1985; van IJzendoorn, 1995). For instance, is the self lovable or unlovable? Is the self worthy of other people's attention and care or unworthy of such affection and investment? Are other people warm and caring or selfish and unreliable? Can other people be trusted? Can you depend on others when you need them to be there for you?

Object relations often stress the impact that parental abuse or neglect has on the infant's emerging representations of self and others (Blatt, 1994; Luborsky & Crits-Christoph, 1990; Strauman, 1992; Urist, 1980). In essence, the bond between mother (caregiver) and child becomes the child's template for self and for other mental representations. When one's primary caretaker is warm, nurturing, responsive, available, and trustworthy, the parental object satisfies the infant's need for relatedness, communicates a message of approval, and nonverbally sends a message about relationships that encourages secure and affectionate relations; when one's primary caretaker is cold, abusive, unresponsive, neglectful, and unpredictable, the parental object frustrates the infant's need for relatedness, communicates a message of disapproval, and nonverbally sends a message about relationships that encourages insecure and anxiety-ridden relations (Ainsworth, Blehar, Waters, & Wall, 1978; Sullivan, 1953).

Positive mental models of one's self predict adult levels of self-reliance, social confidence, and self-esteem (Feeney & Noller, 1990; Klohnen & Bera, 1998). Similarly, as shown in Box 14, secure mental models of others predict the quality of one's adult romantic relationships (Feeney & Noller, 1990; Hazan & Shaver, 1987), including

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BOX 14



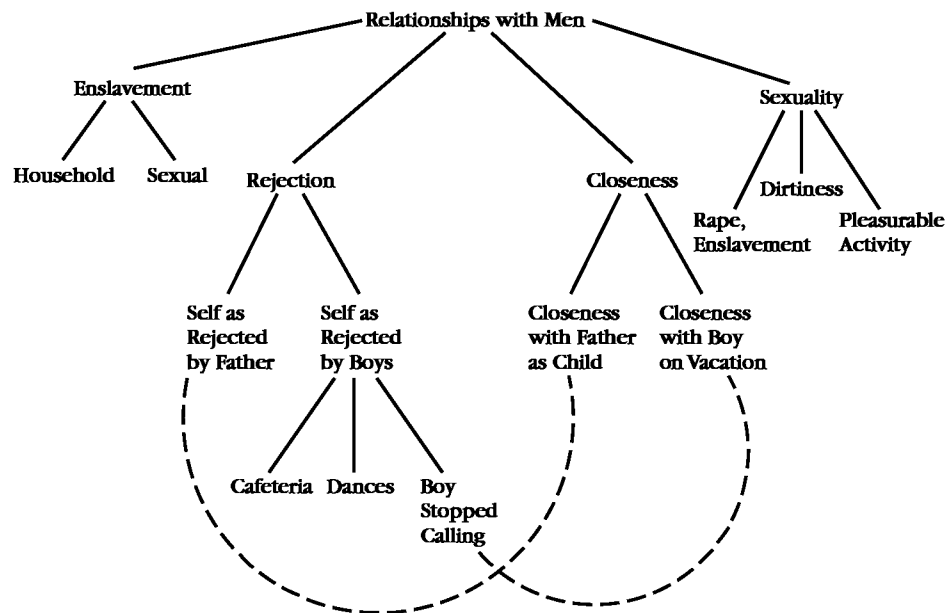


Figure 14.3 One Woman's Representation of Her Relationships with Men

Source: From "Social Cognition and Object Relations," by D. Westen, 1991, *Psychological Bulletin*, 109, pp. 429–455. Copyright 1991 by American Psychological Corporation. Reprinted with permission.

whether that person ever marries and, if so, how long that person stays committed to that marriage (Klohn & Be a, 1998). Alternatively, a childhood of interpersonal traumas (e.g., physical abuse, erious neglect, sexual molestation) and parental psychopathology (e.g., depression, anxiety, substance abuse, violent marital interaction) predict adulthood dysfunctional rela ionships (Mickelson, Kessler, & Shaver, 1997).

For a concrete example, consider a schematic of one female's mental representation of men, which is depicted in Figure 14.3 (Westen, 1991). The young woman suffered from rather severe depression and social isolation, and she reported a childhood history in which she characterized her parents as openly contemptuous of one another. Her mother co stantly spoke of the ways in which she was victimized verbally and sexually by her husband and three sons. In the course of psychotherapy, the woman's mental representation of her expected and actual relationships with men became apparent. Her mental representation, as illustrated in Figure 14.3, contains aspects of a psychological need for relatedness (closeness, sexuality), but it also contains an ample supply of abuse (enslavement), anger and resentment (rejection), and conflict (close with father, yet also rejected by father).

The feelings associated with men are difficult to represent in a figure, but they too are part of the woman's object ("men") relations. As you might suspect, the woman's conflicting needs and feelings led her to adopt an interpersonal style toward men that was extremely anxious and avoidant.

According to object relations theory, the quality of any one's mental representations of relationships (e.g., Figure 14.3) can be characterized by three chief dimensions: (1) unconscious tone (benevolent vs. malevolent), (2) capacity for emotional involvement (selfishness/narcissism vs. mutual concern), and (3) mutuality of autonomy with others.

First, mental representations possess an unconscious affective tone (Westen, 1991). This affective coloring of the object world ranges from understanding relationships as good-benevolent versus bad-malevolent. Second, mental representations possess an unconscious capacity for emotional involvement (Westen, 1991). This capacity ranges from a narcissistic, exploitive, and unilateral orientation toward relationships to a more mature relatedness based on mutual concern, respect, and eagerness to invest in the relationship. Third, mental representations possess a capacity for the mutuality of autonomy (Urist, 1980). At its higher level (mutuality of autonomy), objects are viewed as having an autonomous existence vis-à-vis one another, and relationships present no risk to the integrity and autonomy of the participants. At its lower level, objects are viewed in an absence of any sense of their own autonomy, and relationships are seen as overpowering threats to oneself (Ryan, Avery, & Grolnick, 1985; Urist, 1977).

Research on object relations theory underscores the fundamental motivational significance of people's psychological need for relatedness. When this need is nurtured through warm and responsive care, a person develops positive mental models of him- or herself, of significant others, and of relationships in general. Positive object relations, in turn, enable the person to develop, and to relate to others, in ways that are healthy, growth-oriented, and resistant to psychopathology. When this need for relatedness is frustrated or ignored through cold, rejecting, and unresponsive care, however, a person develops maladaptive mental models that leave him or her vulnerable to psychopathology and to developing unhealthy and defense-oriented motivational orientations, as illustrated through one woman's defense-oriented representation of men in Figure 14.3.

CRITICISMS

Despite its intrigue, Freud's psychoanalytic contribution to the study of human motivation is plagued by (at least) two criticisms. Contemporary research on psychodynamics has addressed and smoothed over many criticisms but it helps to identify the most important and limiting ones nonetheless, because contemporary researchers still have some more smoothing over to accomplish.

The most devastating criticism against Freud is that many of his concepts are not scientifically testable (Crews, 1996; Eysenck, 1986). Without scientific tests, such concepts are best taken with skepticism and understood metaphorically rather than as credible scientific constructs. In science, theoretical constructs that have not yet stood the test of objective experimentation must remain guilty until proven innocent, invalid until proven valid. For this reason, psychoanalytic thinkers have spent the last 50 years finding ways to test Freud's ideas and, once accomplished, glean his many ideas into a core set of postulates like the four mentioned earlier in the chapter. Some (but certainly not all) of Freud's ideas have indeed stood the test of empirical validation (Fisher & Greenberg, 1977; Masling, 1983; Silverman, 1976). Other ideas and phenomena have been reinterpreted in ways that do not rely on psychoanalytic concepts (e.g., consider Brown's (1991) analysis of the tip-of-the-tongue phenomenon and Wegner's (1994) analysis of mental control). But on many points about human motivation and emotion, Freud was simply wrong (e.g., his theory of superego formation; Fisher & Greenberg, 1977).

A second criticism is that although psychodynamic theory is a wonderful interpretive device for events that occurred in the past, it is woeful as a predictive device. For instance, suppose a person has a dream about siblings dying (as discussed earlier in the chapter).

For one person, the dream might be best interpreted as a wish for her siblings to die. For a second person, however, the dream might be best interpreted (via reaction formation) as a wish for her siblings to survive. For yet another person, the siblings' deaths or survivals might represent sentiments associated with a third party, for instance, one's own children. All these post hoc (after the fact) interpretations make sense in psychoanalysis. The theory, however, is very poor at predicting a priori (before the fact) that a person will have a dream specifically about siblings sprouting wings and flying off into the sky. For the theory to be predictive, it must allow us to anticipate when a person will or will not have a particular type of dream (or use a particular defense mechanism, or achieve a particular level of ego development, or commit suicide, etc.). A scientific theory must be able to predict what will happen in the future. It is hard to trust a theory that explains only the past. It is even harder to apply such a theory in productive ways to real-life settings, such as schools or the workplace.

In the neo-Freudian years, the ego psychologists have taken these criticisms to heart. They respect both the insight of Freud and the criticisms levied against his subjective (nonscientific) methods of data collection. The contemporary study of thought suppression, ego development, defense mechanism, and effectance motivation use relatively more rigorous scientific research methods and pay relatively more attention to building a theoretical framework that values a priori prediction over post hoc explanations.

SUMMARY

Psychoanalysis makes for a strangely appealing study. By studying the unconscious and by embracing a rather pessimistic view of human nature, psychoanalysis opens the door to study topics such as traumatic memories, inexplicable addictions, anxieties about the future, dreams, hypnosis, inaccessible and repressed memories, fantasies, masochism, repression, self-defeating behaviors, suicidal thoughts, overwhelming impulses for revenge, and all the hidden forces that shape our needs, feelings, and ways of thinking and behaving that we would probably not want our neighbors to know about us. The subject matter of psychoanalysis strangely reflects what seems to be so popular in contemporary movies (hence, in contemporary society): sex, aggression, psychopathology, revenge, and the like.

The father of the psychoanalytic perspective was Sigmund Freud. His view of motivation presented a biologically based model in which the two instinctual drives of sex and aggression supplied the body with its physical and mental energies. Contemporary psychoanalysts, however, emphasize the motivational importance of psychological wishes (rather than biological drives) and of cognitive information processing. The concept of the psychological wish retains the full spirit of Freudian motivation, but it overcomes the contradictory evidence that sex and aggression do not function like physiological drives.

Four postulates define contemporary psychodynamic theory. The first is that much of mental life is unconscious. This postulate argues emphatically that thoughts, feelings, and desires exist at the unconscious level. Thus, because unconscious mental life affects behavior, people can behave in ways that are inexplicable, even to themselves. Three contemporary views on the unconscious include the Freudian unconscious, the adaptive unconscious, and implicit motivation. The adaptive unconscious rather automatically appraises the environment, sets goals, makes judgments, and initiates action, all while we are consciously thinking about something else. Implicit motivation is rooted in emotional associations that lie outside of our conscious awareness, as the emotional associations, when cued by encountering cue-activating environmental events, orients, directs, and selects attention such that people automatically attend to emotionally linked environmental events.

The second postulate of a contemporary psychodynamic understanding of motivation and emotion is that mental processes operate in parallel with one another, such that people commonly want and fear the same thing at the same time. This is the postulate of psychodynamics. It is the rule, not the exception, that people have conflicting feelings that motivate them in opposing ways. Hence, people commonly harbor divergent conscious and unconscious racial attitudes, gender biases, and love/hate (approach/avoidance) relationships with their parents, their jobs, and practically everything else in their lives.

The third postulate is that of ego development. Healthy development involves moving from an immature, socially dependent personality to one that is more mature and socially responsible. According to neo-Freudians, the ego develops motives of its own by moving through the following developmental progression: symbiotic, impulsive, self-protective conformist, conscientious, and autonomous. To develop and to overcome immaturity and vulnerability, the ego must gain resources and strengths, including resilient defense mechanisms for coping successfully with the inevitable anxieties of life (e.g., ego defense) and a sense of competence that provides a generative capacity for changing the environment for the better (e.g., ego effectance).

The fourth postulate of a contemporary psychodynamic understanding is that mental representations of self and others form in childhood to guide adult social motivations. This is the postulate of object relations. It argues that lifelong personality patterns begin to form in childhood as people construct mental representations of the self, others, and relationships. Once formed, these beliefs form the basis of motivational states (e.g., relatedness, anxiety) that guide the course of the adult's interpersonal relationships. Positive mental models of oneself, for instance, predict adult levels of self-reliance, social confidence, self-esteem, and loving and committed partnerships. Negative mental models, on the other hand, forecast dysfunctional interpersonal relationships.

READINGS FOR FURTHER STUDY

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Chapter 15

Growth Motivation and Positive Psychology

HOLISM AND POSITIVE PSYCHOLOGY

Holism

Positive Psychology

SELF-ACTUALIZATION

Hierarchy of Human Needs

Deficiency Needs

Growth Needs

Research on the Need Hierarchy

Encouraging Growth

ACTUALIZING TENDENCY

Emergence of the Self

Conditions of Worth

Conditional Regard as a Socialization Strategy

Congruence

Fully Functioning Individual

CAUSALITY ORIENTATIONS

GROWTH-SEEKING VERSUS VALIDATION-SEEKING

HOW RELATIONSHIPS SUPPORT THE ACTUALIZING TENDENCY

Helping Others

Relatedness to Others

Freedom to Learn

Self-Definition and Social Definition

THE PROBLEM OF EVIL

POSITIVE PSYCHOLOGY AND GROWTH

Optimism

Meaning

Eudaimonic Well-Being

Positive Psychology Therapy

CRITICISMS

SUMMARY

READINGS FOR FURTHER STUDY

Each of us is born with a dispositional temperament. Our biologically inherited temperament predisposes us to act in ways that are naturally inhibited and introverted or in ways that are naturally impulsive and extraverted. Some of us are natural introverts while some of us are natural extraverts.

But cultures have preferences for about how people should behave. For instance, the typical college campus culture values extraversion, emotional intensity, and being exciting and entertaining while it relatively devalues introversion, emotional calm, and being a wallflower. Thus, each of us hears two messages of how to behave socially—one from our biological temperament and another from cultural priorities. This dual message is not much of a problem for extraverts: Just act naturally and the culture will value you. The dual message is a problem, however, for introverts.

Introverts face a dilemma. What happens when biological disposition contradicts socialization preference? What happens when an experience feels right and natural, but the culture devalues anyone who gravitates toward that experience? Should the introvert follow the cultural press and reject his inner nature and try to substitute a more socially acceptable extraverted style in its place?

Introverts who are like extraverts do experience some of the positive emotional benefits of acting in extraverted ways (e.g., having fun at a party; Lucas, Diener, Grob, Suh, & Shao, 2000). And, what is wrong with the individual's effort to be sensitive to, adjust to, and accommodate to her culture? Humanistic psychology is willing to answer that question. It argues that rejecting one's nature in favor of social priorities puts personal growth and psychological well-being at risk.

Imagine yourself in the following experiment (Ford, 1991a). The experiment begins by asking you to self-report your temperament, using questionnaires such as those discussed in Chapter 13 for extraversion, sensation-seeking, and affect intensity. The experimenter also asks for permission to send identical questionnaires to one of your parents (i.e., your primary caretaker), asking him or her to complete each in terms of how you behaved during the preschool ages of 3–5 years. The ages 3–5 are important because toddlerhood is old enough for temperament to express itself and be observed by parents yet also young enough to precede the heavy socialization that occurs as toddlers venture out of the house. The study's prediction is that adults who express something other than their childhood temperament will show maladjustment. That is, the prediction is that when the culture tries to replace a person's inner nature with a socially valued style—that is, when the culture tries to socialize the introvert into becoming an extravert, then what follows is maladjustment.

To index maladjustment, the experimenter also asks you to complete questionnaire measures of anxiety, depression, hostility, feelings of inadequacy, and physical/somatic troubles. To test the humanistic hypothesis, the experimenter computes a discrepancy

score of the difference between your expressed temperament as an adult and your parent's rating of your temperament as a child. Results showed the greater the discrepancy, the greater the adult's maladjustment. People who were pressured—willingly or unwillingly—into acting in ways that contradicted their biologically based temperaments encountered problems.

These findings introduce the theme of this chapter: “If this essential core (inner nature) of the person is frustrated, denied, or suppressed, sickness results” (Maslow, 1968). To Abraham Maslow's theme, we can add its logical complement: If this essential core is nurtured, appreciated, and supported, health results.

The everyday choice to follow “one's inner nature” versus “cultural priorities” is not a neutral choice. Social preferences and social priorities are communicated to us and strongly enforced as desirable ways of acting by all sorts of supports, including incentives, rewards, approval, love, advertising messages, social demands, norms, expectations, and all the voices we hear each day that tell us what we should, ought to, have to, and must be. The social message is strong. Inner guides, in contrast, are subtle. Unlike the culture around us, inner guides have no organized lobby to persuade us what to do. So, in everyday living, our inner guides are relatively quiet while social expectations and cultural priorities are relatively loud.

It is easy to hear the culture's priorities, but it might not be so psychologically healthy to unquestionably following these priorities. For instance, people who choose to devote their lives to the pursuit of the “American dream” (the pursuit of money, fame, and popularity) suffer more psychological distress (anxiety, depression, narcissism) than do people who pursue inner guides like self-actualization. This is true even when those who pursue the American dream do actually attain the money, fame, and popularity they seek (Kasser & Ryan, 1993, 1996). Humanistic psychology plays a key role in motivation by asking people to pause, listen to their inner guides, and consider the potential benefits of coordinating their inner guides (interests, preferences, values) with their day-to-day life style. Research on positive psychology adds that inner guides like meaning, authenticity, and the passion to learn add reservoirs of strength and wellness and, further, that it is the effort to develop these personal strengths, rather than the effort to realize cultural priorities, that makes us happy (Seligman, 2002).

HOLISM AND POSITIVE PSYCHOLOGY

Human motives can be understood from many different perspectives, ranging from the most objective viewpoints of objectivism (Diserens, 1925), behaviorism (Watson, 1919), and logical positivism (Bergmann & Spence, 1941) to the most subjective viewpoints of existentialism (May, 1961), gestalt psychology (Goldstein, 1939; Perls, 1969), and holism (Aristotle, *On the Soul*). Along with existentialism and gestalt psychology, holism asserts that a human being is best understood as an integrated, organized whole rather than as a series of differentiated parts. It is the whole organism that is motivated rather than just some part of the organism, such as the stomach or brain. In holism, any event that affects one system affects the entire person. To borrow a phrase from Maslow, it is John Smith who desires food, not John Smith's stomach.

In modern parlance, holism sees little value in a “bottom-up” approach (i.e., focus on specific, individual motives, one at a time, and in relative isolation from one another) and,

instead, prefers a “top-down” approach (i.e., focus on general, all-encompassing motives, seeing how the master motives govern the more specific ones). Both the bottom-up and the top-down approaches to motivation study have merit. This chapter, however, highlights the top-down approach (while Chapters 3 and 4 highlight the bottom-up approach).

Holism

Holism derives its name from “whole” or “wholeness” and therefore concerns itself with the study of what is healthy, or unbroken. In contrast, a broken view of personality emphasizes human beings as fragmented sets of structures or forces that oppose one another. For instance, a broken view speaks of the conflict between an ideal self and an actual self, or the conflict between the biological desire for food and the social demand for a slim figure. In psychoanalytic theory (see Chapter 14), a broken self manifests itself in a sort of psychological competition among the three personality structures of id, ego, and superego (i.e., psychodynamics). In contrast, humanism identifies strongly with the holistic perspective, as it stresses “top-down” master motives, such as the self and its strivings toward fulfillment.

In a nutshell, humanistic psychology is about discovering human potential and encouraging its development. To accomplish this, the humanistic perspective concerns strivings (1) toward growth and self-realization and (2) away from facade, self-concealment, and the pleasing and fulfilling of the expectations of others (Rogers, 1966). In every page authored by humanistic thinkers, the reader can hear a commitment to personal growth as the ultimate motivational force.

Positive Psychology

Positive psychology is a newly emerging field in psychology (Seligman & Csikszentmihalyi, 2000; Snyder & Lopez, 2002). It seeks to articulate the vision of the good life (psychologically speaking), and it uses the empirical methods of psychology to understand what makes life worth living. The goal is to show what actions lead to experiences of well-being, to the development of positive individuals who are optimistic and resilient, and to the creation of nurturing and thriving institutions and communities. The subject matter of positive psychology is therefore the investigation of positive subjective experiences such as well-being, contentment, satisfaction, enjoyment, hope, optimism, meaning, flow, competence, love, passion for work, hope, courage, perseverance, self-determination, interpersonal skill, talent, creativity, originality, authenticity, future mindedness, wisdom, interpersonal responsibility, good citizenship, altruism, tolerance and civility, a strong work ethic, and the nurturance of others.

Positive psychology is not a subfield of humanistic psychology. It chooses the same subject matter as does humanistic psychology, so the two fields do substantially overlap one another. What sets positive psychology apart from humanistic psychology is not its subject matter but is, instead, its strong reliance on hypothesis-testing, data-based empirical research. Positive psychology is the more scientifically rigorous of the two fields of study. As one positive psychologist put it, “Positive psychology is psychology, and psychology is science” (Peterson, 2006).

Positive psychology looks at a person and asks, “What could be?” As a field, positive psychology realizes both that people routinely fall short of “what could be” and also the epidemic-like prevalence of pathologies such as depression, substance abuse, apathy, and violence. It further realizes the important role played by the effort to cure or reverse these human pathologies. Mostly, however, positive psychology devotes attention to the proactive building of personal strengths and competencies. To prevent sickness, people need to possess strengths such as hope, optimism, skill, perseverance, intrinsic motivation, and the capacity for flow. The question is less “How can we correct people’s weaknesses?” and more “How can we develop and amplify people’s strengths?” How can families, schools, and corporations develop human strengths? How can these communities foster excellence? Positive psychology seeks to make people stronger and more productive, and positive psychology seeks to actualize the human potential in all of us.

SELF-ACTUALIZATION

Self-actualization is an inherent developmental striving. It is a process of leaving behind timidity, defensive appraisals, and a dependence on others that is paired with the parallel process of moving toward courage to create, make realistic appraisals, and achieve autonomous self-regulation. It is “an underlying flow of movement toward constructive fulfillment of its inherent possibilities” (Rogers, 1980). It refers to an ever fuller realization of one’s talents, capacities, and potentialities (Maslow, 1987).

The two fundamental directions that characterize self-actualization as a process are autonomy and openness to experience. *Autonomy* means moving away from heteronomy and toward an ever-increasing capacity to depend on one’s self and to regulate one’s own thoughts, feelings, and behaviors (Deci & Ryan, 1991). *Openness* means receiving information (including feelings) such that it is neither repressed, ignored, or filtered, nor distorted by wishes, fears, or past experiences (Mittelman, 1991). Through openness, one leaves behind timidity and defensive appraisals and moves toward greater mindfulness, the courage to create, and realistic appraisals. Through autonomy, one leaves behind a dependence on others and moves toward self-realization.

Hierarchy of Human Needs

The cornerstone of Maslow’s understanding of motivation is the proposition that human needs can be organized into five clusters. The arrangement of these need clusters, Maslow felt, was best communicated visually by a hierarchy, as illustrated in Figure 15.1. The first set of needs contains physiological needs, as discussed in Chapter 4. All the other needs in the hierarchy are psychological needs (safety and security, love and belongingness, esteem, and self-actualization). The hierarchical presentation conveys three themes about the nature of human needs (Maslow, 1943, 1987).

1. Needs arrange themselves in the hierarchy according to potency or strength. The lower the need is in the hierarchy, the stronger and more urgently it is felt.
2. The lower the need is in the hierarchy, the sooner it appears in development. Young people experience only the lower needs in the hierarchy, while older people are more likely to experience the full range of the hierarchy.

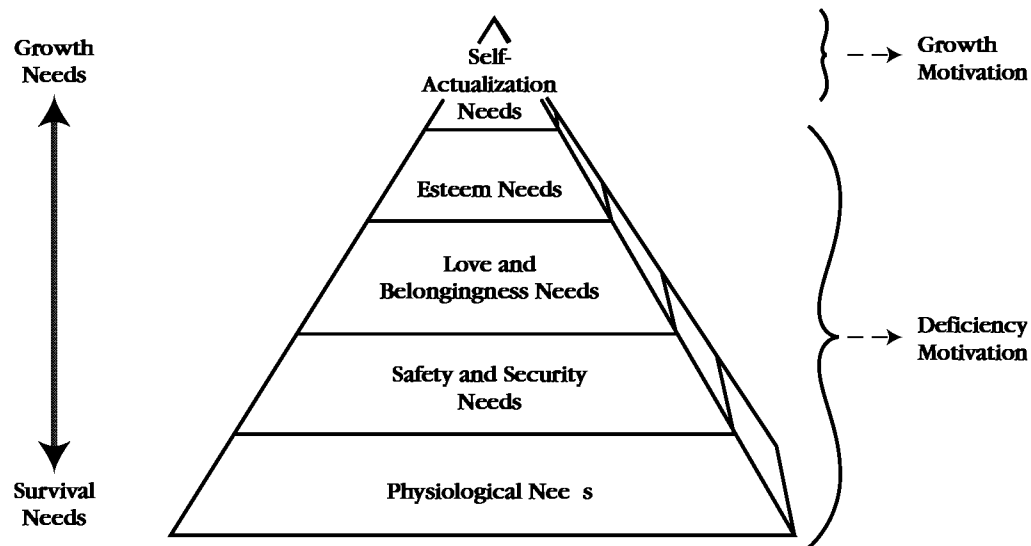


Figure 15.1 Maslow's Need Hierarchy

3. Needs in the hierarchy are fulfilled sequentially, from lowest to highest, from the base of the pyramid to its apex.

Theme 1 proposes that the survival-based needs (at the bottom of the hierarchy) dominate as the strongest motives, whereas the self-actualization needs (at the top) are the weakest. In theme 1, Maslow wanted to make the point that self-actualization needs are relatively quiet urges that are easily overlooked in the rush of one's day-to-day affairs. Theme 2 communicates that the lower needs (e.g., safety and security) characterize needs typical of nonhuman animals and of children, whereas the higher needs (e.g., esteem) are uniquely human and pertain to adults. Theme 3 stipulates that satisfying lower needs is a prerequisite to satisfying higher needs. Hence, before people experience the needs for esteem and peer respect, they must first sufficiently gratify their physiological, safety, and belongingness needs.

Deficiency Needs

Physiological disturbances and needs for safety, belongingness, and esteem are collectively referred to as deficiency needs. Deficiency needs are like vitamins; people need them because their absence inhibits growth and development. The presence of any of the deficiency needs indicated that the individual was in a state of deprivation, whether that state of deprivation involved food, job security, group membership, or social status. Maslow (1971) characterized such deprivation as human sickness, a term he used to connote a failure to move toward growth and actualization.

Growth Needs

Given satisfaction of all deficiency needs, growth needs surface and render the person restless and discontent. The person no longer feels hungry, insecure, isolated, or inferior, but he instead feels a need to fulfill personal potential. Growth needs—or

self-actualization needs—provide energy and direction to become what one is capable of becoming: “A musician must make music, an artist must paint, a poet must write, if he is to be ultimately happy. What a man can be, he must be. This need we may call self-actualization” (Maslow, 1943). Putting the sexist language aside, it can be difficult to pinpoint precisely what self-actualization needs are and are not. One can understand physiological needs by thinking of hunger and thirst, but self-actualization is a more abstruse term. It is actually a master motive that coalesces 17 “metaneeds,” such as longing for a sense of wholeness, aliveness, uniqueness, and meaning.

One way to discover what self-actualization needs are is to pay attention to the pathological state that arises when the person is deprived of each metaneed (Maslow, 1971). For instance, when deprived of the need for wholeness, the person feels a sense that one’s world is falling apart in chaos and disintegration. When deprived of a sense of aliveness, the person suffers through a sense of just going through the motions day after day. A man deprived of the need for uniqueness might speculate that his wife could easily find another mate that would be just as good a husband as he. In other words, sometimes it is easier to hear people’s pathological states of disintegration, deadness, sameness, dishonesty, humorlessness, and despair than it is to hear people’s actualized states of wholeness, aliveness, uniqueness, truth, playfulness, and meaning.

Research on the Need Hierarchy

Maslow’s need hierarchy was, and still is, wildly popular. It has been embraced as a *modus operandi* in education, business, management, the workplace, psychotherapy, and the health professions of medicine, nursing, and geriatrics (Cox, 1987). The need hierarchy can still be found in practically all introductory psychology textbooks. It also fits nicely with both personal experience and common sense. Despite its tremendous popularity, research has actually found very little empirical support for the need hierarchy (Wahba & Bridwell, 1976).

One research strategy investigates changes in motivation related to age (Goebel & Brown, 1981). According to Maslow’s second theme, the young tend to be occupied with physiological and safety needs, while adults tend to be occupied with esteem and actualization needs, generally speaking. Goebel and Brown (1981) had children, adolescents, young adults, middle-age adults, and older adults report which needs were most important to them. Age did not predict need importance. For instance, self-actualization ranked lowest (not highest) for older adults. A second research strategy tests the hierarchy’s validity using the rank-order method (Blair, 1964; Goodman, 1968; Mathes, 1981). In this methodology, participants rank the needs in the order of desirability or importance. In general, the way people rank the needs does not conform to Maslow’s predicted order. College students’ priorities, for instance, were (in order from least to most important): esteem, security, self-actualization, belongingness, and physical/physiological (Mathes, 1981).

These data involve only self-reports of needs (rather than actually experiencing deprivation directly) but, overall, the pattern of findings casts considerable doubt on the hierarchy’s validity. The only finding with some empirical support is the conceptualization of a dual-level (not a five-level) hierarchy. In a dual-level hierarchy, the only distinction is between deficiency and growth needs (Wahba & Bridwell, 1976), and when researchers make this distinction they do find some empirical support for the two-level

hierarchy (Sheldon et al., 2001). Thus, three conclusions from research on the need hierarchy are to:

1. Reject the five-level hierarchy.
2. Collapse the physiological, safety, belongingness, and esteem needs into the single category of deficiency needs.
3. Hypothesize a simplified, two-level hierarchy distinguishing only between deficiency and growth needs.

Given these conclusions, take a second look at Figure 15.1. In your mind's eye, erase the three horizontal lines that separate the physiological, safety, belongingness, and esteem needs. With these lines erased, you will see one large triangle that includes the full range of the deficiency needs and one small triangle at the top for the self-actualization needs.

Encouraging Growth

Despite enjoying tremendous popularity, research on the hierarchy demonstrated its shortcomings. When talking and theorizing about deficiency needs, Maslow made some mistakes. But when talking about growth needs, he was much more in his element and many of his ideas about growth needs have indeed stood the test of time.

Maslow estimated that less than 1% of the population ever reached self-actualization. Because the self-actualization needs were supposedly innate, one is left wondering why everyone does not ultimately self-actualize. In some cases, Maslow reasoned, people fail to reach their potential because of a nonsupportive internal (e.g., chronic back pain) or external (e.g., chronic poverty) environment. In other cases, the person was responsible for her own lack of growth (i.e., each of us fears our own potential, which Maslow termed the “Jonah complex,” after the timid Biblical merchant who tried to flee his great calling). Like Maslow, all humanistic thinkers continue to emphasize that the process of self-emergence is an inherently stressful and anxiety-provoking process, because it always makes the person face the insecurities of personal responsibility. When a person works toward self-emergence, she typically feels isolated and, to some degree, alone, or what Erich Fromm (1941) called the “unbearable state of powerlessness and aloneness.” Facing such insecurity and facing the burden of having personal responsibility for one's freedom and personal growth, many people—like Jonah—seek escape (Fromm, 1941). The popular musical *The Sound of Music* illustrates this process for two young identity-seeking adults, as Liesl sings “I’ll need someone older and wiser showing me what to do,” while Rolf becomes an automaton within the powerful authoritarian military force of the day. Rolf's life choice represents a common one in which the person takes the safe route—finding assurance in social authority and then doing only what is needed to be competent enough.

Maslow recognized the contradiction between his proposition that self-actualization was innate (and therefore operative in all human beings) and his observation that few among us actually gratify self-actualization needs. Ever the counselor and clinician, Maslow (1971) therefore offered several everyday behaviors for encouraging growth, as listed in Table 15.1.

Table 15.1 Six Behaviors That Encourage Self-Actualization**1. Make Growth Choices**

See life as a series of choices, forever a choice toward progression and growth versus regression and fear. The progression-growth choice is a movement toward self-actualization, whereas the regression-fear choice is a movement away from self-actualization. For instance, enroll in a difficult but skill-building college course rather than in a safe and “easy A” course.

2. Be Honest

Dare to be different, unpopular, nonconformist. Be honest rather than not, especially when in doubt. Take responsibility for your choices and the consequences of those choices. For instance, at a bookstore, pick a book that reflects your personal (but not necessarily popular) interest rather than a book featured on the best seller’s list.

3. Situationally Position Yourself for Peak Experiences

Set up conditions to make peak experiences more likely. Get rid of false notions and illusions. Find out what you are not good at, and learn what your potential is by learning what your potentials are not. Use your intelligence. If you are talented and interested in playing the piano, then spend more and more time in that domain and less and less time in more socially-rewarding domains in which you lack talent and interest.

4. Give Up Defensiveness

Identify defenses and find the courage to give them up. For instance, instead of using fantasies to prop up the self and to keep anxiety at bay, drop the indulgent fantasy and get to work on developing the skills needed to actually become that sort of person.

5. Let the Self Emerge

Perceive within yourself and see and hear the innate impulse voices. Shut out the noises of the world. Instead of only looking to others to tell you who to become, also listen to your own personal interests and aspirations of who you want to become.

6. Be Open to Experience

Experience fully, vividly, selflessly with full concentration and total absorption. Experience without self-consciousness, defenses, or shyness. Be spontaneous, original, and open to experience. In other words, stop and smell the roses.

In addition, Maslow stressed the important role of relationships—intimate and fulfilling relationships rather than the all-too-common superficial ones—as the soil for cultivating peak experiences (Hardeman, 1979). Setting up conditions to foster growth in our lives involved not only enacting the sort of behaviors listed in Table 15.2 but also involved engaging ourselves in relationships that support both autonomy and openness.

ACTUALIZING TENDENCY

Humanistic psychology’s emphasis on holism and self-actualization can be represented by Carl Rogers’s (1951) oft-cited quotation: “The organism has one basic tendency and striving—to actualize, maintain, and enhance the experiencing self.” Fulfillment of physiological needs maintains and enhances the organism, as does the fulfillment of needs for belongingness and social status. Furthermore, a motive such as curiosity enhances and actualizes the person via greater learning and the development of new interests. Overall, Rogers (1959, 1963) recognized the existence of specific human motives and

even the existence of clusters of needs like those proposed by Maslow's hierarchy, but he emphatically stressed the holistic proposition that all human needs serve the collective purpose of maintaining, enhancing, and actualizing the person.

Rogers, like Maslow, believed that the actualizing tendency was innate, a continual presence that quietly guides the individual toward genetically determined potentials. This forward-moving pattern of development was characterized by "struggle and pain," and Rogers offered the following illustration for communicating the self-actualizing tendency's path toward development and growth. The 9-month-old infant has the genetic potential to walk but must struggle to advance from crawling to walking. The struggle to make those first steps inevitably includes episodes of falling and feeling frustrated, hurt, and disappointed. Despite the struggle and pain, the child nevertheless persists toward walking and away from crawling. The pain and disappointment undermine and discourage the child's motivation to walk, but the actualization tendency, "the forward thrust of life," supports the child ever forward. The actualizing tendency is the source of that energy that motivates development "toward autonomy and away from heteronomy" (Rogers, 1959).

All experiences within the struggle and pain of actualizing one's potential are evaluated in accordance with an "organismic valuation process," an innate capability for judging whether a specific experience promotes or reverses growth. Experiences perceived as maintaining or enhancing the person are positively valued. Such growth-promoting experiences are given the metaphorical green light by the organismic valuation process



and are subsequently approached. Experiences perceived as regressive are valued negatively. Such growth-blocking experiences are given the metaphorical yellow or red light by the organismic valuation process and are therefore subsequently avoided. In effect, the organismic valuation process provides an experiential feed-forward system that allows the individual to coordinate life experiences in accordance with the actualization tendency.

The actualizing tendency motivates the individual to want to undertake new and challenging experiences, and the organismic valuation process provides the interpretive information needed for deciding whether the new undertaking is growth-promoting or not. The feed-forward system of the organismic valuation process is an interesting addition to a motivational analysis of behavior as it complements the many feedback systems already discussed (i.e., physiological stop system in Chapter 4, goal-feedback system in Chapter 9). With a feedback system, information follows behavior to affect continuing motivation and subsequent persistence; with feed-forward system, information precedes behavior to communicate a proverbial green, yellow or red light as to one's *intention* to act and, hence, applies mainly to the initiation (rather than the persistence) of behavior.

Emergence of the Self

The actualizing tendency characterizes the individual as a whole. With the emergence of the self, a person grows in complexity, and the organismic valuation process begins to apply not only to the organism as a whole but also to the self in particular. The most important motivational implication of the emergence of the self is that the actualizing tendency begins to express itself in part toward that portion of the organism conceptualized as the self. This means that the individual gains a second major motivational force in addition to the actualizing tendency, namely the self-actualizing tendency. Notice that actualization and self-actualization are not the same thing (Ford, 1991b), as the actualizing tendency and the self-actualizing tendency can work at odds with one another, as discussed in the next section.

The emergence of the self prompts the emergence of the need for positive regard—approval, acceptance, and love from others. The need for positive regard is of special significance because it makes the individual sensitive to the feedback of others (criticisms and praises). The evaluations and priorities expressed by other people assume a greater importance in one's life. Over time, evaluating the self from other people's points of view becomes a rather automated and internalized process.

Conditions of Worth

Soon after birth, children begin to learn the "conditions of worth" on which their behavior and personal characteristics (the self) are judged as either positive and worthy of acceptance or negative and worthy of rejection. Eventually, because the need for positive regard sensitizes the individual to attend to the acceptances and rejections of others, the child internalizes parental conditions of worth into the self structure. Throughout development, the self structure expands beyond parental conditions of worth to include societal conditions of worth as well. By adulthood, the individual learns from parents, friends, teachers, clergy, spouses, coaches, employers, and others what behaviors and

which characteristics are good and bad, right and wrong, beautiful and ugly, desirable and undesirable.

According to Rogers (1959), all of us live in two worlds—the inner world of organismic valuing and the outer world of conditions of worth. To the extent to which one internalizes conditions of worth, these acquired conditions of worth gain the capacity to substitute for, and largely replace, the innate organismic valuation process. When governed by conditions of worth, individuals necessarily divorce themselves from their inherent means of coordinating experience with the actualizing tendency. No longer is experience judged in accordance with the innate organismic valuation process. Rather, experience is judged in accordance with conditions of worth.

Rogers viewed the child's movement toward conditions of worth and away from organismic valuation as antithetical to the development of the actualizing tendency. When the developing individual adheres to conditions of worth, he moves farther away from an inherent ability to make the behavioral choices necessary to actualize the self. The overall process and consequences of adherence to either the organismic valuation process or socialized conditions of worth are summarized in Figure 15.2.

The way not to interfere with organismic valuation is to provide “unconditional positive regard,” rather than the “conditional positive regard” that emanates from conditions of worth. If given unconditional positive regard, a child has no need to internalize societal conditions of worth. Experiences are judged as valuable to the extent that they enhance oneself (see upper half of Figure 15.2). If parents approve of, love, and accept their child for who she naturally is (i.e., unconditional positive regard) rather than for who the parents wish her to be (i.e., conditional positive regard), then the child and the child's self-structure will be a relatively transparent representation of his or her inherent preferences, talents, capacities, and potentialities. A condition of worth arises, however, when the positive regard of another person is conditional—depends on some way of being or some way of behaving (see lower half of Figure 15.2). Here, experiences are judged as valuable to the extent that they are approved of by others.

In the absence of salient conditions of worth, no conflict exists between the actualizing tendency and the self-actualizing tendency, and the two motivational tendencies remain unified (Rogers, 1959). Internalized conditions of self-worth, however, create the potential for motivational conflict. With conditional self-regard, conflict between the actualizing and self-actualizing tendencies creates a tension and internal confusion since some aspects of behavior are regulated by the actualizing tendency, while other aspects of behavior are regulated by the self-actualizing tendency (Ford, 1991b; Rogers, 1959). Self-actualization, when evaluated and directed via conditions of worth rather than organismic valuation, can paradoxically lead a person to develop in a way that is incongruent, conflicting, and maladaptive (Ford, 1991b). Thus, self-actualization does not necessarily lead to and result in health and growth. Sometimes the pursuit of self-actualization leads to and results in maladjustment, as when conditions of worth define and direct self-actualization processes. Health and growth occur only when the actualizing tendency and the self-actualizing tendency are in synchronization and when all experiences are evaluated internally within the framework of organismic valuation.

Parents, for instance, are placed in difficult positions when their child expresses a somewhat socially undesirable characteristic, such as shyness, moodiness, irritability,

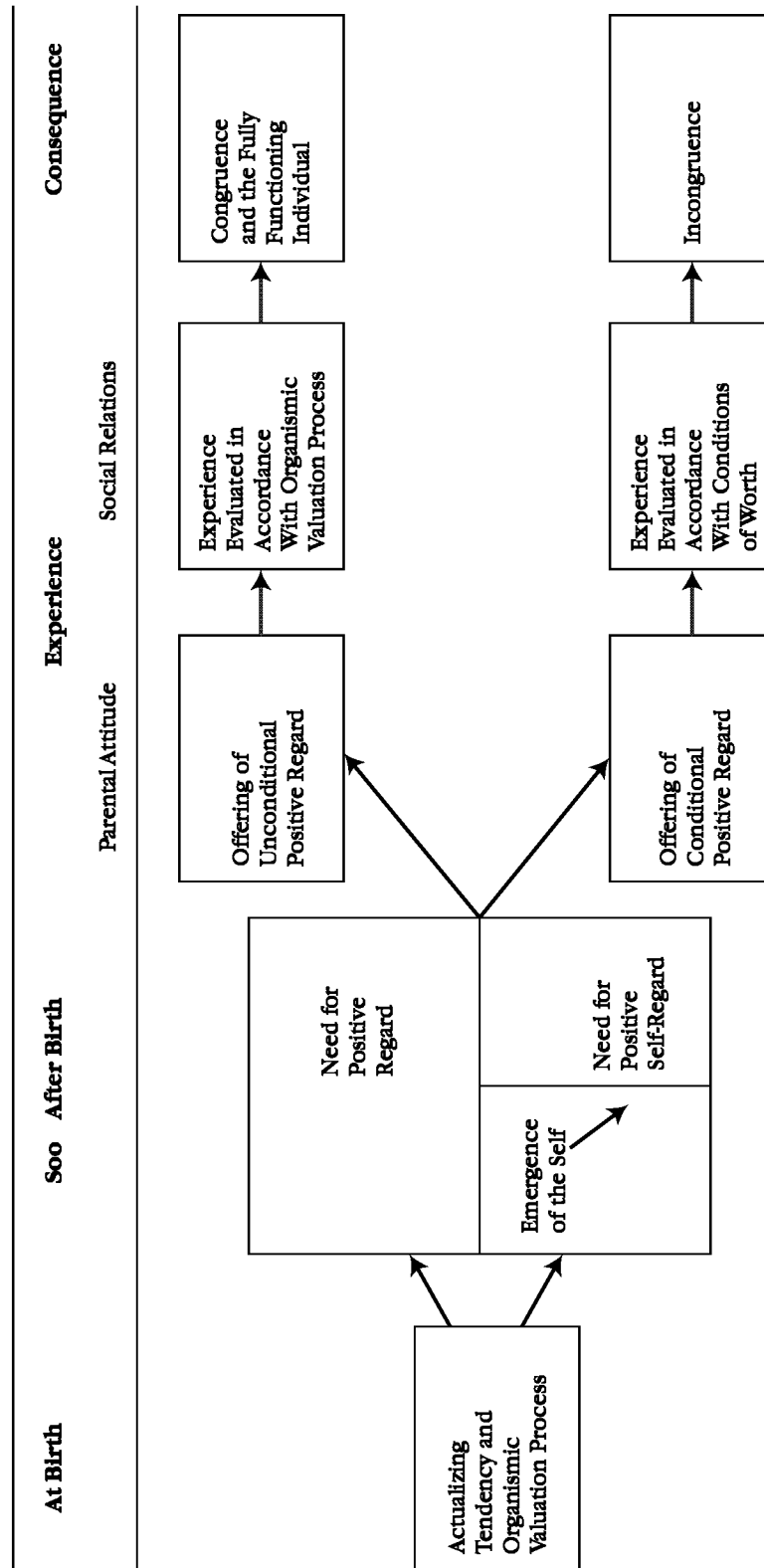


Figure 15.2 Rogerian Model of the Process of Self-Actualization

or an explosive temper (e.g., recall the chapter's opening vignette). Conditional positive regard implies rejection and retraining for the child's temperament, in the name of promoting social inclusion and popularity. But unconditional positive regard implies acceptance of and support for the child's natural temperament. The difficult position the parents face manifests itself in the dilemma of avoiding psychological costs (e.g., depression) versus avoiding social costs (e.g., peer rejection) to the developing child (Dykman, 1998).

Conditional Regard as a Socialization Strategy

To socialize children and adolescents, adults (parents, teachers) sometimes go about the effort by creating "internal compulsions" within the socializee to do what the adult wants them to do and to believe what the adult wants them to believe (Assor, Kaplan, Kanat-Mayman, & Roth, 2005; Assor et al., 2004). The prototype of such a pressuring socialization strategy is conditional regard, which is the offering of love for obedience paired with the withdrawal of love for disobedience. Conditional regard, a synonym of conditions of worth, comes in two forms—positive and negative. Positive conditional regard is giving love and affection for obedience and achievement; negative conditional regard is taking away love and affection for disobedience and failure. While conditional regard uses the potent motivational force of parental love to gain immediate obedience, it creates negative emotions such as anxiety and anger that lead children and adolescents to long-term motivational dysfunctions (e.g., amotivation, apathy, resentment) and maladaptive functioning (e.g., passivity, dropout, perfectionism).

Congruence

Congruence and incongruence describe the extent to which the individual denies and rejects (incongruence) or accepts (congruence) the full range of his or her personal characteristics, abilities, desires, and beliefs. Psychological incongruence is essentially the extent of discrepancy or difference between "the self as perceived and the actual experience of the organism" (Rogers, 1959). The individual might perceive him- or herself as having one set of characteristics and one set of feelings but then publicly express a different set of characteristics and a different set of feelings. Conflict between experience—expression reveals incongruence; harmony between experience—expression reveals congruence.

When people move toward identifying with external conditions of worth, they adopt facades. A facade is essentially the social mask a person wears, and it relates to ways of behaving that have little to do with inner guides and much to do with a social front to hide behind (Rogers, 1961). Consider the unauthentic smile (the social facade of acting very happy and very friendly). Introverts often find themselves wearing the facade of the unauthentic smile on a regular basis, as when they force themselves to smile for hours at a social gathering. Doing so on a regular basis—acting one way yet feeling another way—predicts proneness to maladjustment, including anxiety, depression, self-doubt, and hypoassertiveness (Ford, 1995). Adopting socially desirable facades carries its psychological costs.

Fully Functioning Individual

According to Rogers, when fully functioning, the individual lives in close and confident relationship to the organismic valuation process, trusting that inner direction. Congruence is a constant companion. Furthermore, the fully functioning individual spontaneously communicates inner impulses both verbally and nonverbally. He or she is open to experience, accepts the experiences as they are, and expresses those experiences in an unedited and authentic manner. To characterize the moment-to-moment experience of the fully functioning individual, Figure 15.3 illustrates the sequential process of a motive's emergence, acceptance, and unedited expression.

CAUSALITY ORIENTATIONS

People vary in their understandings of the forces that cause their behavior. Some people adopt a general orientation that their inner guides and self-determined forces primarily initiate and regulate their behavior; others adopt a general orientation that outer social guides and environmental incentives primarily initiate and regulate their behavior. To the extent that individuals habitually rely on internal guides (e.g., needs, interests), individuals have an *autonomy causality orientation*. To the extent that individuals habitually rely on external guides (e.g., social cues), they have a *control causality orientation*.

The autonomy orientation involves a high degree of experienced choice with respect to the initiation and regulation of behavior (Deci & Ryan, 1985a). When autonomy oriented, people's behavior proceeds with a full sense of volition and an internal locus of causality. Needs, interests, and personally valued goals initiate the person's behavior, and needs, interests, and goals regulate his or her decision in persisting or quitting. In making a choice of college majors or careers to pursue, external factors such as salary and status are not irrelevant influences, but autonomy-oriented individuals pay closer attention to their needs and feelings than they do environmental contingencies and pressures.

The control orientation involves a relative insensitivity to inner guides, as control-oriented individuals prefer to pay closer attention to behavioral incentives and social expectations (Deci & Ryan, 1985a). When control oriented, people make decisions in response to the presence and quality of incentives, rewards, social expectations, and social concerns (e.g., pleasing others). A central ingredient in the determination of control-oriented people's ways of thinking, feeling, and behaving is a sense of pressure to comply with what is demanded or with what *should* be done. Environmental factors

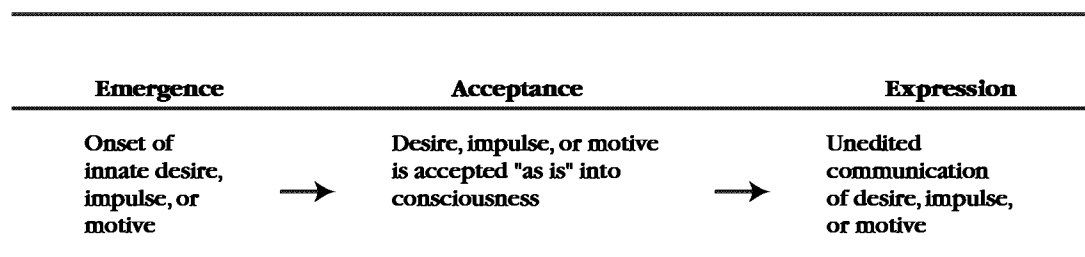


Figure 15.3 Fully Functioning as the Emergence, Acceptance, and Expression of a Motive

BOX 15

such as pay and status are very important. When researchers ask control-oriented individuals what they aspire to, the goals that energize and direct their behavior involve the pursuit of financial and material success (Kasser & Ryan, 1993).

The General Causality Orientations Scale (Deci & Ryan, 1985a) measures causality orientations by presenting a series of 12 vignettes (short stories). Each vignette presents a situation and lists responses to that situation, one of which is autonomy oriented and

the other of which is control oriented. (A third scale to assess the impersonal orientation is not discussed here.) For instance, one of the vignettes presents the following situation:

You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:

I wonder if the new work will be interesting? (Autonomy)

Will I make more money at this position? (Control)

Causality orientations reflect self-determination in the personality. Hence, self-determination theory explains the origins and dynamics of causality orientations (Chapter 5; Deci & Ryan, 1985b). The autonomy-oriented personality is characterized by intrinsic motivation and identified regulation, as the forces that cause behavior are personal needs and interests (intrinsic motivation), as well as beliefs and values that have been integrated into the self (identified regulation). The control-oriented personality is characterized by extrinsic regulation and introjected regulation, as the forces that cause behavior are environmental rewards and constraints (extrinsic regulation), and beliefs and values that have been forced onto the self (introjected regulation). Because of its close relationship to self-determination in personality, the autonomy orientation, like self-determination in general, correlates positively with measures of positive functioning, such as self-actualization, ego development, self-esteem, openness to experience, attitude-behavior consistency, and acceptance of one's true feelings (Deci & Ryan, 1985a; Koestner, Bernieri, & Zuckerman, 1992; Scherhorn & Grunert, 1988). This is true in domains as diverse as religion, education, prosocial behavior, and trying to empower the self to make important life changes such as losing a lot of weight (Ryan & Connell, 1989; Ryan et al., 1993; Williams et al., 1996).

When people seek to change their behavior, they typically rely on either internal guides (personal goals) or external guides (relationship pressures) to do so. While participating in a weight-loss program, for instance, people can generally rely on both internal and external support for assistance and motivation for changing their behavior (Williams et al., 1996). After the program ends, however, people lose much of their external support (the staff, the structure of the program) for changing their behavior. Researchers therefore reasoned that the more autonomy oriented the participants were, the more likely it was that they would stay in the program from one week to the next, lose weight during the program, and, most importantly, maintain their weight loss after the program ended (i.e., maintain the behavior change). How autonomy-oriented individuals succeeded in maintaining their behavior change appears in Figure 15.4. The more autonomy oriented the participants were (and the more autonomy supportive the staff-patient interactions were), the more these participants relied on relatively autonomous reasons for losing weight, such as identified regulation ("It is important to my health that I lose more weight") rather than external regulation ("My spouse will divorce me if I don't lose more weight"). Rooting weight loss motivation in autonomous reasons promoted week-to-week attendance, and the more frequently they attended meetings the more successful they were in losing weight and maintaining that weight loss, as indicated in the figure by a decline (−.23) in their final body mass index (BMI).

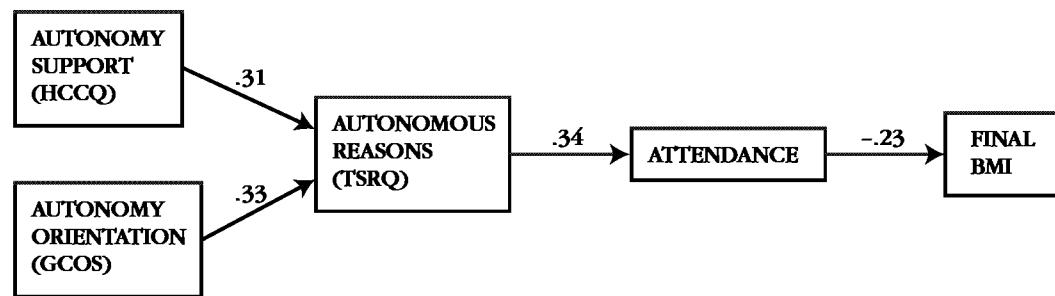


Figure 15.4 Model of Self-Determined Weight Loss

Source: Adapted from “Motivational Predictors of Weight Loss and Weight-Loss Maintenance,” by G. C. Williams, V. M. Grow, E. R. Freedman, R. M. Ryan, and E. L. Deci, 1996, *Journal of Personality and Social Psychology*, 70, pp. 115–126. Copyright 1996 by American Psychological Association. Adapted with permission.

GROWTH-SEEKING VERSUS VALIDATION-SEEKING

When people identify with and internalize societal conditions of worth, they do more than just adopt socially desirable facades. Quasi-needs emerge. A quasi-need (see Chapter 7) emerges to the extent that the individual *needs* social approval—directly or symbolically—during social interaction. That is, valuing oneself along the lines of societal conditions of worth leads people into processes of validation-seeking. For the person who *needs* the approval of others to feel good about him- or herself, fulfilling others’ conditions of worth leads to validation whereas failing to live up to others’ conditions of worth leads to a perceived lack of personal worth, competence, and likeability.

During social interaction, people who seek external validation often use interpersonal situations to test or measure their personal worth, competence, or likeability. That is, other people—their peers, employers, teachers, and romantic partners—are seen as sources of external validation and as social yardsticks by which to measure one’s personal worth (Dykma, 1998). Positive outcomes generally leave the validation-seeking individual feeling rather accepted and validated. The adjustment problems surface following negative outcomes because these problems imply a lack of personal worth, competence, or likeability.

In contrast to validation-seeking individuals, growth-seeking individuals center their personal strivings around learning, improving, and reaching personal potential. Seeking growth leads one to adopt a pattern of thinking in which situations and relationships are seen as opportunities for personal growth, learning, or self-improvement. As with validation-seeking individuals, positive outcomes from interpersonal interaction (e.g., social inclusion, interpersonal acceptance, athletic or academic successes) generally leave the growth-seeking individual feeling validated as well because the growth-seeking individual experiences a sense of progress. Unlike validation-seeking individuals, however, negative interpersonal outcomes (e.g., exclusion, rejection, failure) fail to usher in adjustment problems because negative outcomes simply identify and communicate information about life areas that are in need of improvement.

The Goal Orientation Inventory (GOI; Dykman, 1998) measures validation-seeking and growth-seeking strivings as relatively enduring personality characteristics. The

respondent is asked to agree or disagree on whether the item describes how he or she thinks and acts in general:

Instead of just enjoying activities and social interactions, most situations to me feel like a major test of my basic worth, competence, or likeability. (Validation-Seeking).

Personal growth is more important to me than protecting myself from my fears. (Growth-Seeking)

The distinction between striving for validation versus growth is important because it predicts vulnerability to mental health difficulties. For instance, the more people strive for validation, the more likely they are to suffer anxiety during social interaction, fear of failure, low self-esteem, poor task persistence, and high depression (see the first column of numbers in Table 15.2). In contrast, the more people strive for growth, the more likely they are to experience low interaction anxiety, low fear of failure, high self-esteem, high task persistence, and low depression (see the second column of numbers in Table 15.2). In terms of self-actualization, growth-seeking individuals are more likely to view themselves as living in the present (highly time competent) and behaving in accordance with one's own principles (inner directed; see Table 15.2).

Another name for validation seeking is the intentional, deliberate, and bend-over-backwards pursuit of high self-esteem. The pursuit of high self-esteem, while understandable, is fraught with important and debilitating long-term costs, including costs to one's personal autonomy (through ego-involvement), sacrifices to one's learning, costs to one's relationships with others, costs to physical health, and costs to mental health (Crocker & Park, 2004). Somewhat paradoxically, growth-striving cultivates

Table 15.2 Correlations with Indices of Psychological Well-Being for the Two Goal Orientations of Validation-Seeking and Growth-Seeking

Dependent Measure	Validation-Seeking Scale of the GOI	Growth-Seeking Scale of the GOI
Interaction anxiety	.46**	-.48**
Social anxiety	.42**	-.41**
Fear of failure	.50**	-.48**
Self-esteem	.59**	-.56**
Task persistence	-.40**	.55**
Depression	.38**	-.36**
Self-actualization:		
Time competence scale	-.51**	.20*
Inner directedness scale	-.56**	.31**

* $p < .05$; ** $p < .01$. N ranged from 101 to 251 for each correlation reported above.

Note: The personality scale for each measure listed above was as follows: Interaction anxiety, Interaction Anxiousness Scale (Leary, 1983); social anxiety, Social Anxiety Subscale of the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975); fear of failure, Fear of Failure Scale (Dykman, 1998); self-esteem (reverse scored), Rosenberg's Self-Esteem Scale (Rosenberg, 1965); task persistence, Hope Scale (Snyder et al., 1991); depression, Beck Depression Inventory (Beck et al., 1979); and self-actualization, Personality Orientation Inventory (Shostrom, 1964, 1974).

Source: From "Integrating Cognitive and Motivational Factors in Depression: Initial Tests of a Goal-orientation Approach," by B. M. Dykman, 1998, *Journal of Personality and Social Psychology*, 74, pp. 139–158. Copyright 1998 by American Psychological Association. Adapted with permission.

self-esteem, as gains in self-esteem are a natural byproduct of making progress (or growth). When reflecting on self-esteem, one researcher recommends, “Enjoy it after it arrives, but do not focus on it or think too much about it, prior to its arrival” (Sheldon, 2004, p. 423).

This distinction between validation-seeking and growth-seeking is another way of expressing Maslow’s distinction between deficiency and growth needs. Seeking validation is the pursuit to restore one’s deficiency needs, at least at the interpersonal level, whereas seeking growth is the pursuit of looking for opportunities to realize one’s potential. The distinction also expresses a climate of conditional positive regard versus a climate of unconditional positive regard. Seeking validation is a striving that grows out of parent–child interactions characterized by critical, conditional, and perfectionistic parenting (the lower half of Figure 15.2), whereas seeking growth is a striving that grows out of parent-child interactions characterized by supportive, nonjudgmental, and accepting parenting (the upper half of Figure 15.2) (Blatt, 1995; Dykman, 1998).

HOW RELATIONSHIPS SUPPORT THE ACTUALIZING TENDENCY

The extent to which individuals develop toward congruence and adjustment depends greatly on the quality of their interpersonal relationships. At one extreme, relationships take on a controlling tone as others force their agendas on other people, pushing them toward heteronomy and a commitment to conditions of worth. At the other extreme, relationships take on a supportive tone as they promote autonomy by affording people the opportunity and support necessary to move from heteronomy toward autonomy. Such relationships nurture the actualizing tendency.

In humanistic therapy, for example, a client moves toward health and psychological congruence when his or her therapist brings the following characteristics into the relationship: warmth, genuineness, empathy, interpersonal acceptance, and confirmation of the other person’s capacity for self-determination (Kramer, 1995; Reeve, 2006; Rogers, 1973, 1995). *Warmth* essentially means caring for and enjoying spending time with the other person. *Genuineness* acknowledges that each person must be fully present in and open to the relationship’s here and now, offering personal authenticity rather than a professional facade of being a therapist, or “the expert.” *Empathy* relates to listening to and hearing all the messages the other is sending and also truly understanding and willingly adopting the other’s perspective on experience. Empathy occurs as one person gains the capacity to enter into the private perceptual world of the other and becomes thoroughly at home in that world. *Interpersonal acceptance* means that each person in the relationship experiences a basic acceptance and trust from the other (unconditional positive regard). Finally, *confirmation of the other person’s capacity for self-determination* acknowledges that the other person is capable and competent and possesses an inherently positive developmental direction. Within a humanistic framework, these five characteristics reflect the quality of an interpersonal relationship.

Helping Others

Interpersonal relationships become constructive, helpful relationships when they function as an arena that allows people to become more mature, better integrated, and more open to experience (Rogers, 1995). Helping, in the humanistic tradition, does not involve an

expert rushing in to solve the problem, to fix things, to advise people, or to mold and manipulate them in some way. Instead, helping involves letting the other person discover, and then be, him- or herself. This last insight communicates the antithesis of conditions of worth.

Relatedness to Others

One index of healthy psychosocial development is the extent to which the individual accepts social conventions, accommodates the self to the society, internalizes cultural values, cooperates with others, shows respect for others, and so on. Rather than being independent, selfish, and socially detached, self-actualizers are actually good citizens. What motivates the willingness to accommodate the self to others is the need for relatedness (Goodenow, 1993; Ryan & Powelson, 1991). Interpersonally, relatedness (Chapter 6) refers to need-satisfying experience in which one feels emotionally connected to, interpersonally involved with, liked by, respected by, and valued by another person. When this is so, relatedness is high and internalization of external regulations occurs willingly (Ryan & Powelson, 1991).

But relatedness can come with a price—a hidden agenda in which one person asks for compliance from the other before granting love or approval (Gruen, 1976). Conditions of worth, for instance, essentially mean that the other person's (or society's) love, approval, care, and emotional connectedness are contingent on compliance with socialization standards and norms. But there is another type of relatedness between people besides a conformity-demanding conditional positive regard—namely, the unconditional acceptance and support between people (Hodgins et al., 1996; Ryan, 1993). Consider relatedness in both childhood and adult development. The quality of relatedness in early attachments (infant and caretaker) depends on how sensitive and responsive caregivers are to the infant's needs and initiatives (Colin, 1996). The paradoxical conclusion that emerged from Mary Ainsworth's classic program of research on infant attachment was that infants who received warm, need-satisfying, responsive, sensitive care from mothers did not become dependent or needy; instead, nurturance enabled and even liberated the child's autonomy (Ainsworth, 1989). Relationships rich in relatedness seemingly paradoxically facilitate autonomy (Hodgins et al., 1996). In contrast, when others provide contingent conditions of worth, people often forgo autonomy in order to preserve relatedness. In optimal development, neither autonomy nor relatedness is forgone (Ryan, 1993).

Freedom to Learn

Rogers continually lamented contemporary educational practices. He did not like the idea of a "teacher" because he felt that the only learning that really mattered was self-initiated learning (Rogers, 1969). As a teacher looking back at the results of his own efforts, Rogers felt that he was responsible for more damage than good. Little of consequence occurs when a teacher gives out heaps of information for students to digest. Instead of "teacher," Rogers preferred "facilitator," a term that describes the classroom leader as one who creates and supports an atmosphere conducive to students' learning. Learning does not follow teaching. Rather, learning follows having one's interests identified,

facilitated, and supported. Self-discovery and self-evaluation are of prime importance, while criticisms and evaluation by teachers are inconsequential or harmful. Thus, education is not something a teacher can give to (or force on) a student. Rather, education must be acquired by the student through an investment of his energies and interests.¹

In practice, humanistic education typically manifests itself in three themes (Allender & Silberman, 1979):

- The facilitator (i.e., teacher) functions as a structuring agent in an open classroom.
- Students take responsibility for initiating their own learning.
- Students learn cooperatively and in a context of the peer group.

A facilitator relies on setting up learning centers or stations in the classroom to encourage students' choices and initiatives, and the facilitator focuses most of his or her attention on identifying and supporting students' needs, desires, interests, and preferences (McCombs & Pope, 1994). Personal responsibility for learning moves students out of the role of passive receivers of knowledge and into the role of active learners who construct their own understandings. Peer-based cooperative learning facilitates individual learning by allowing students to communicate their ideas to others as well as to learn from the feedback, modeling, and insight of their peers (Johnson & Johnson, 1985). When classrooms support students' initiatives (rather than teach them what to learn), students gain academic confidence, show greater mastery motivation, and participate more actively during learning activities (deCharms, 1976; Reeve et al., 2004; Ryan & Grolnick, 1986). To be fair, contemporary educational psychology research shows many benefits from traditional teaching (Ausubel, 1977). So Rogers's contribution to educational practice was more to add a student centered approach to the educator's repertoire rather than to replace teacher-centered instruction in the schools.

Self-Definition and Social Definition

Self-definition and social definition are personality processes related to how individuals conceptualize who they are (Jenkins, 1996; Stewart, 1992; Stewart & Winter, 1974). Socially defined individuals accept external definitions of who they are. Self-defined individuals resist these external definitions and instead favor internal definitions of the self. Many people conceptualize themselves as using both sources of information, but some people rely rather fully either on self-definition or on social definition processes.

Self-definition and social definition processes are particularly instructive in the developing identities of women (Jenkins, 1996). Compared to their socially defined counterparts, self-defined women are more autonomous and independent in their interpersonal relationships (they depend less on others) and social roles (they may prefer nontraditional occupations). They take decisive and successful goal-directed actions, as in occupational decisions and strategies for career development. They organize their goals around self-determined aspirations, including their own personal decisions to get married or not and to have children or not. They are also less invested in so-called traditional roles,

¹Golfer Ben Hogan, in a Rogerian spirit, gave the following reply to answer why he had not written another instructional book: "Golf is a game that cannot be taught; it must be learned."

such as wife and mother. In contrast, socially defined women prefer to work with and depend on others. They prefer traditional female roles both at home and at work. They are typically willing to compromise in terms of their plans, college-degree aspirations, career persistence, and relationships in general. Decisions and experience flow not from the self but, instead, from the social support of others and the beliefs, abilities, and aspirations of those others. And by depending on others, socially defined married women hope for husbands who can provide them with a life that is stimulating and challenging.

THE PROBLEM OF EVIL

Much of the spirit of humanistic psychology follows the questionable assumption that “human nature is inherently good.” But do we as a society dare trust people who follow their inner guides? Freedom and self-determination are fine if human nature is benevolent, cooperative, and warmhearted. But what if human nature is malevolent, selfish, and aggressive? What if human nature is evil, or at least partly evil?

Humanistic thinkers wrestle with the nature of evil (Goldberg, 1995; Klose, 1995). The discussion typically takes one of two forms. On the one hand, the discussion asks *how much* of human nature is evil? This question asks, “If family, political, economic, and social systems were benevolent and growth-promoting, then would human evil be reduced to zero or would some residual ferociousness remain?” (Maslow, 1987). On the other hand, the discussion tries to understand evildoers (e.g., murderers, rapists) who confess to enjoying what they do and express a willingness to continue doing such acts (Goldberg, 1995).

Evil is the deliberate, voluntary, intentional infliction of painful suffering on another person without respect for his or her humanity or personhood. Rogers’s conviction was that evil was not inherent in human nature. He argued that if caretakers provided enough nurturance and acceptance and if they established a genuine connectedness with those they cared for, then people would inevitably choose good over evil (Rogers, 1982). Hence, human beings behave malevolently only to the extent that they have been injured or damaged by their experience. Violence reflects a history of relationships steeped in power and control (Muehlenhard & Kimes, 1999), while altruism reflects a history of relationships steeped in empathy and care (Batson, 1991).

Other humanists see more ambiguity in human nature. They assume that benevolence *and* malevolence are part of everyone. In this view, under one set of social conditions, the actualizing tendency pairs itself with life-affirming values and adopts constructive ways for relating and behaving; but under another set of conditions, the actualizing tendency pairs itself with malicious values and leads to cruelty and destructive behavior (May, 1982). Thus, a person needs a value system (standards of right and wrong) to support and complement the organismic valuation process. If adults (parents) do not provide a child with a benevolent value system, then that child will grab a value system wherever it is available, be it among equally confused peers on the street, the college fraternity world, or Wall Street (Maslow, 1971). The recent study of suicide terrorists shows that these individuals were pretty much normal people who were intensely committed to a cause and to a set of values that they saw as greater than themselves (Atran, 2003). If a society cannot provide a benevolent value system for all its members, then it must

build safeguards and structures into its social systems to renounce cruelty and to counter impulses to do evil (Bandura, 1999).

When people *desire* to act in ways that promote evil, they possess a malevolent personality (Goldberg, 1995). The descent into a malevolent personality is a slippery course of choices and developmental progressions (Baumeister & Campbell, 1999; Fromm, 1964; Goldberg, 1995). Evil develops as follows (Staub, 1999): (1) Adults shame and scorn the child such that the child comes to the conclusion that he or she is flawed and incompetent as a human being; (2) the child incubates a negative self-view and comes to prefer lies and self-deceit over critical self-examination; (3) a transition occurs from being a victim to becoming an insensitive perpetrator; (4) the person initiates experimental malevolence; and (5) the malevolent personality is forged through a rigid refusal to engage in critical self-examination (Staub, 1999). The self becomes unwilling to examine itself (e.g., scapegoating is used as a strategy for sacrificing others to preserve one's own self-image; Baumeister et al., 1996), and success in intimidation fosters the self-aggrandizement that counteracts the need for self-examination (Goldberg, 1995).

This view argues that evil springs out of a person's grandiosity and damaged concept of self to explain heinous acts. The cause seems to have its origin in enculturation, not in human nature. It is difficult to determine whether or not evil is inherent in human nature. Within a supportive interpersonal climate, people's choices move them in the direction of greater socialization, improved relationships, and toward what is healthy and benevolent (Rogers, 1982). Therefore, as murder, war, and prejudice continue unabated throughout human history, the culprit might not be the evil in human nature but, alternatively, the sickness in culture. As long as society offers people choices, the possibility remains that its members will internalize a pathological value system that makes possible the descent into evil and the forging of a malevolent personality (May, 1982).²

POSITIVE PSYCHOLOGY AND GROWTH

Positive psychology looks at people's mental health and the quality of their lives to ask, "What could be?" (Seligman & Csikszentmihalyi, 2000). It seeks to build people's strengths and competencies. It does not ask that people put on rose-colored glasses or adopt Pollyanna as a role model. Instead, positive psychology makes the case that strengths are as important as are weaknesses, resilience is as important as is vulnerability, and the lifelong task to cultivate wellness is as important as is an intervention attempt to remedy pathology. The fundamental assertion on what positive psychology rests is that good mental health requires more than the absence of mental illness. Many people simply feel empty—not ill but floundering more than flourishing. Positive psychology tries to

²A final question asks whether human evil can be healed. One constant in humanistic thinking is that it never condemns without an affirmation of hope. But the malevolent personality is a tough one. Four reasons exist to explain the difficulty in healing evil: (1) the malevolent personality's closed nature (unwillingness to engage in critical self-examination), (2) the rarity of the malevolent personality's genuine motivation to change, (3) the odds against the malevolent personality finding those supportive conditions in which motivation for personal change can take root and fulfill itself, and (4) the strong influence of the individual's choice to change or not (Klose, 1995).

Table 15.3 Personal Strengths Investigated as the Subject Matter of Positive Psychology

* Happiness	* The Passion to Know
* Enjoyment	* Wisdom
* Resilience	* Authenticity
* Capacity for Flow	* Toughness
* Personal Control	* Self-Determination
* Optimism	* Forgiveness
* Optimistic Explanatory Style	* Compassion
* Hope	* Empathy
* Self-Efficacy	* Altruism
* Goal-Setting	* Humor
* Meaning	* Spirituality

encourage flourishing—high levels of emotional, psychological, and social well-being that grows out of continuous self-growth, close and high-quality relationships, and a purposive and meaningful life (Keyes, 2007).

A sampling of the human strengths that comprise the subject matter of positive psychology appears in Table 15.3 (from Snyder & Lopez, 2002). The building of the strengths in Table 15.3 yield two interrelated outcomes: (1) fostering personal growth and well-being and (2) preventing human sickness (e.g., depression, suicide) from ever taking root within the personality. For insight on how this might be so, consider the three illustrative strengths of optimism, meaning, and eudaimonic well-being.

Optimism

Most people are neither realistic nor accurate in how they think. Most of us think we are better than average, and most of us think we are better than average in all sorts of domains (e.g., driving, teaching, honesty, you name it). Many of us harbor within us a positivity bias. This pervasive tendency to see ourselves in a positive light is associated with well-being and enhanced performance (Taylor, 1989; Taylor & Brown, 1988). Optimism grows out of this positivity, and can be understood as a positive attitude or a good mood that is associated with what one expects to unfold in his or her immediate and, especially, long-term future (Peterson, 2000).

Wishful thinking can do more harm than good (Oettingen, 1996), and it is often illusory (Freud, 1927). Still, empirical evidence supports the conclusion that people who are optimistic live more worthwhile lives than do people who are not optimistic. Optimists experience better psychological and physical health (Scheier & Carver, 1992), undertake more health-promoting behaviors (Peterson, Seligman, Yurko, Martin, & Friedman, 1998), show greater persistence and more effective problem solving, and are more socially popular (Peterson, 2000). The reason this is so is because optimism gives people a sense of hope and motivation that their future can indeed be improved, as in cases such as increasing school achievement, improving personal health, and growing in an interpersonal relationship (Seligman, 1991). Positive psychologists counter their critics by pointing out the difference between optimism and delusion—arguing that

optimism is responsive to reality while delusions are not (Taylor, Collins, Skokan, & Aspinwall, 1989).

Optimism can be taught and learned (Seligman, Reivich, Jaycox, & Gillham, 1995). Optimism is generally taught through the enactment of the positive thinking and cognitive strategies that is the optimistic explanatory style (discussed in Chapter 9). Peterson (2006) argues that learned optimism is hard work, and provides the example of the “hot seat technique.” In this therapeutic strategy, the person creates dozens of index cards, with each card listing a different event capable of pushing our buttons and leaving us feeling burned out and helpless (e.g., the boss ignores you when passing by in the hallway). With each new card (event) the person is to try to identify the immediate, automatic, and pessimistic thoughts that are triggered. Then, just as rapidly, the person is to evaluate the evidence for the pessimistic thought and then generate an alternative and optimistic interpretation of the event (e.g., a negative outcome that is a attributionally unstable and controllable). When equipped with greater optimism our more positive expectations and emotions open the door to ways of coping and performing that are more productive than are our more sanguine ways of coping and performing.

Meaning

Existentialism is the study of the isolation and meaninglessness of the individual in an indifferent universe. Existentialism has been studied in one of two ways—the gloom and doom pessimism of Sartre or the optimism and sense of purpose of Victor Frankl. Though Frankl predated positive psychology, his logotherapy (logo = meaning) made popular the contention that, while there was no meaning to life in general, there was great meaning within each individual life. Meaning was a need of discovery and accomplishment that each individual needed to strive for, and it was as fundamental a human need as was hunger. When confronted with the awareness of the existential vacuum (“my life is meaningless”), Frankl argued that this awareness simply signaled that our will toward meaning was alive and well.

From a motivational point of view, meaning in life grows out of three needs (Baumeister & Vohs, 2002). The first need is purpose. To give today’s activity and struggle a sense of purpose, it helps if the person generates future-oriented goals, such as trying to graduate high school, fall in love during a summer vacation, or go to heaven in the afterlife. Connecting the activity of the day with a future goal effectively endows day-to-day activity with a sense of purpose it otherwise would not have. The second need is for values. Values define what is good and what is right, and when we internalize or act on a value we affirm a sense of goodness in us. The third need is for efficacy. Having a sense of personal control or competence is important because it enables us to believe that what we do makes a difference. Collectively, a sense of purpose, internalized values, and high efficacy to affect changes in the environment are the motivational means to cultivate meaning in life (Baumeister & Vohs, 2002).

Creating meaning is an active process in which people interpret the events in their lives (Taylor, 1983), find the benefit in these events (Davis, Nolen-Hoeksema, & Larsen, 1998), and discover the significance of what happens to them (Park & Folkman, 1997). So meaning arises as much out of the specific events in our lives—what happens to us—as it does the needs for purpose, values, and efficacy. That is, people create meaning

in response to a health crisis (e.g., cancer), the loss of a loved one, academic failure, unemployment, and career burnout (Baumeister & Vohs, 2002). As Frankl often said (paraphrasing), success is not our greatest achievement but, rather, it is facing a difficult life challenge with dignity and integrity. People who successfully create meaning within a particular life experience typically do so by first framing the event as a burden or bad event. They then explain how that bad event set in progress a developmental trajectory in which the bad event is ultimately translated into a positive outcome. In doing so, they essentially use the burden as a springboard to create a self endowed with strengths such as purpose, moral goodness, and strong efficacy (McAdams, Diamond, de St. Aubin, & Mansfield, 1997). In contrast, people who do not counter life's burdens with purpose, moral goodness, and efficacy (i.e., meaning) are significantly more likely to suffer mental pathology in the wake of the bad event (McAdams 1993, 1996). From this point of view, the act of creating meaning helps prevent future sickness (e.g., depression).

Eudaimonic Well-Being

In differentiating between the two types of happiness—hedonic and eudaimonic—hedonic well-being is the experience of pleasure, the absence of problems, and the living of a relaxed and good life, while eudaimonic well-being is the experience of seeking out challenges, exerting effort, being fully engaged and experiencing flow in what one is doing, acting on one's true values, and feeling fully alive and authentic (Ryan & Deci, 2001). In its essence, eudaimonic well-being is self-realization. Motivational processes that lead to eudaimonic well-being include the concepts of the fully functional individual (Rogers), self-actualization (Maslow), psychological need satisfaction (Chapter 6), and positive self-functioning (Chapter 10). Those who study eudaimonic well-being do not argue that it is more important than is hedonic well-being but, rather, that any analysis of psychological well-being needs to include both happiness and meaning—that is, both hedonic well-being and personal growth (Compton, Smith, Cornish, & Qualls, 1996).

In the study of the antecedents of eudaimonic well-being, research emphasizes three: wealth and materialism, attachment and relationships, and the pursuit of personal goals. As to wealth and materialism, placing too much of a priority on material goods and the pursuit of fame and fortune has the unfortunate side effect of moving people away from the pursuit of basic psychological need satisfactions (Kasser, 2002). The more people focus on material goods, the lower their eudaimonic well-being (Kasser & Ryan, 1996); and the more people focus on psychological needs and intrinsic goals, the greater their eudaimonic well-being (Sheldon & Kasser, 1998). The psychological need that most reliably forecasts eudaimonic well-being is relatedness, and relatedness satisfaction explains why the presence of warm, trusting, intimate, and supportive interpersonal relationships in one's life are such solid predictors of eudaimonic well-being (DeNeve, 1999). In addition, the pursuit of self-endorsed (as opposed to societally imposed) goals foreshadows eudaimonic well-being (Sheldon & Elliot, 1999). Self-endorsed, or self-concordant, goals are those that fulfill basic psychological needs (autonomy, competence, relatedness) and are aligned with one's true self. This is so because subjective experience of autonomy, competence, and relatedness function as the "psychological nutrients" that underlie personal growth and eudaimonic well-being (Sheldon et al., 1998).

Positive Psychology Therapy

Compared to other programs of therapy (e.g., cognitive-behavioral therapy), positive psychology does not yet have a host of validated intervention techniques. To lay the foundation on which to build such techniques, one group of authors created and recommended the following four “happiness exercises” (Seligman, Steen, Park, & Peterson, 2005):

1. *Gratitude visit.* Write and deliver (in person) a letter of gratitude to someone who has been especially kind to you but never really thanked.
2. *Three good things in life.* Each day, write down three things that went well and identify the cause of each.
3. *You at your best.* Write about a time when you functioned at your best. Reflect on the personal resources that made that functioning possible.
4. *Identify signature strengths.* Identify up to five personal signature strengths (from a list such as the one in Table 15.3) and find a way to use each in a new way.

CRITICISMS

After spending a few hours reading Maslow, Rogers, or an article on positive psychology, it is easy to feel good and optimistic about yourself and about human beings in general. For instance, if you read any one of the 15 chapters in Rogers’s (1980) *A Way of Being*, you will likely experience a sense of personal enrichment. Still, one must square the optimism of humanism with daily reality and wonder if it is not overly naive to conceptualize human nature as intrinsically good. If human nature is something to be nurtured rather than constrained, then one wonders why hatred, prejudice, crime, exploitation, and war persist throughout human history without interruption (Geller, 1982). Perhaps people are not so intrinsically honorable and trustworthy. Perhaps people have within themselves not only positive human potentialities but also the potential to destroy themselves and others (Baumeister & Campbell, 1999; May, 1982; Staub, 1999). One can imagine the potentially adverse consequences of a parent or a government that presupposes benevolent inner guides and therefore gives a wide latitude to misbehaving children or citizens (Bandura, 1999). There is some practical truth to the notion that “bad is stronger than good” (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). It seems that the humanistic view emphasizes only one part of human nature.

A second criticism is that humanistic theorists use a number of vague and ill-defined constructs. It is difficult to pinpoint precisely what an “organismic valuation process” and a “fully functioning individual” are, for example. Any theoretical construct that evades a precise operational definition must remain scientifically dubious. For this reason, humanistic views on motivation have been harshly criticized (Daniels, 1988; Neher, 1991). The critics essentially recommend we drop these quasi-scientific concepts. But there is a middle ground that recognizes the relative infancy or newness of humanistic study and positive psychology (O’Hara, 1989). As humanistic psychology and positive psychology mature, empirical research is leaving behind armchair speculation in favor of a more scientific understanding of the origins, dynamics, and consequences of human potentiality.

A third criticism questions how one is to know what is *really* wanted or what is *really* needed by the actualizing tendency (Geller, 1982). Like an inherent actualizing tendency, early learning, socialization, and internalizations can also yield the personal conviction that a way of thinking or behaving is right and natural. For example, if a person is 100% confident that abortion is bad, wrong, and something to be refused, then how is that person to know for sure that such a preference is a product of the organismic valuation process rather than an internalization of societal conditions of worth? Knowledge of right and wrong can be difficult to trace back to the origins of its true source (although enhanced “mindfulness” can help a great deal in this regard). If standards of right and wrong are introjected from infancy, a person can be self-deceived into thinking that their preferences are their own rather than their parents’.

SUMMARY

Humanistic psychology stresses the notions of inherent potentialities, holism, and strivings toward personal fulfillment. In practice, humanistic psychology is about identifying and developing human potential. Positive psychology looks at people’s mental health and how they live their lives to ask, “What could be?” In practice, positive psychology seeks to build people’s strengths and competencies so as to cultivate psychological wellness.

Self-actualization refers to the full realization and use of one’s talents, capacities, and potentialities. In his need hierarchy, Maslow made the distinction between deficiency needs and growth needs. Despite its intuitive appeal and widespread popularity, empirical research actually finds little support for the need hierarchy. Maslow’s contribution to contemporary motivation study is not in the hierarchy but, rather, in his insights about why people fail to self-actualize and what actions they can take to encourage personal growth toward self-actualization.

For Rogers, one fundamental need—the actualizing tendency—subsumed and coordinated all other motives so as to serve the collective purpose of enhancing and actualizing the self. With socialization, children learn societal conditions of worth on which their behavior and personal characteristics are judged. As a consequence, all of us live in two worlds—the inner world of the actualizing tendencies and organismic valuation and the outer world of social priorities, conditions of worth and conditional regard. When people move away from organismic valuing and toward external conditions of worth, they adopt facades and reject or deny personal characteristics, preferences, and beliefs. The terms “congruence” and “incongruence” describes the extent to which an individual denies and rejects personal qualities (incongruence) or accepts the full range of his or her personal characteristics and desires (congruence). The congruent, fully functioning individual lives in close proximity to the actualizing tendency and therefore experiences a marked sense of autonomy, openness to experience, and personal growth.

Causality orientations reflect the extent of self-determination in the personality and concern differences in people’s understanding of what causes and regulates their behavior. For the person with an autonomy–causality orientation, behavior arises in response to needs and interests with a full sense of personal choice. For the person with a control–causality orientation, inner guides are relatively ignored as behavior arises in response to external expectations and controls. Autonomy-oriented individuals experience relatively greater positive functioning than do control-oriented individuals, including long-term maintenance of behavioral changes such as losing weight.

A strong commitment to societal conditions of worth leads people into a process of seeking validation from others. In social interaction, validation-seeking individuals strive to prove their self-worth, competence, and likeability. In contrast, growth-seeking individuals center their strivings

on learning, improving, and reaching personal potential. Validation-seeking individuals are more vulnerable to experiencing anxiety and depression.

Interpersonal relationships support the actualizing tendency in at least four ways: helping others (as in therapy), relating to others in authentic ways, promoting the freedom to learn (as in education), and defining the self. Interpersonal relationships characterized by warmth, genuineness, empathy, interpersonal acceptance, and confirmation of the other person's capacity for self-determination provide the social climate that optimally supports the actualization tendency in another person. Another problem with which humanistic thinkers wrestle is that of evil—namely, how much of human nature is inherently evil and why do some people enjoy inflicting suffering on others? Some humanistic thinkers argue that evil is not inherent in human nature—that human nature is inherently good and evil arises only when experience injures and damages the person. Other humanists assume that both benevolence and malevolence are inherent in everyone—that human nature needs to internalize a benevolent value system before it can avoid evil.

Positive psychology looks at people's mental health and the quality of their lives to ask, "What could be?" It seeks to build people's strengths and competencies, and it makes the study of these strengths and competencies its subject matter. Flourishing is more than the absence of mental illness and depends on well-being that grows out of continuous personal growth, high-quality relationships, and a life characterized by purpose, optimism, meaning, and eudaimonic well-being. To cultivate these strengths, positive psychology therapy offers "happiness exercises" such as gratitude visits.

The chapter concludes by offering a number of criticisms of a humanistic understanding of motivation, including Pollyanna optimism, unscientific concepts, and unknown origins of inner guides.

READINGS FOR FURTHER STUDY

Humanistic Theorists

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Chapter 16

Conclusion

UNDERSTANDING AND APPLYING MOTIVATION

Explaining Motivation: Why We Do What We Do

Predicting Motivation: Identifying Antecedents

Applying Motivation: Solving Problems

MOTIVATING SELF AND OTHERS

Motivating Self

Motivating Others

Feedback on How the Effort to Motivate Self and Others Is Going

DESIGNING MOTIVATIONAL INTERVENTIONS

Four Case Studies

Four Success Stories

Attaining Personal Goals

Motivating Students

Suppressing the Urge to Smoke

Autonomy-Supportive Parenting

WISDOM GAINED FROM A SCIENTIFIC STUDY OF MOTIVATION AND EMOTION

Your neighbor drops by looking like she is at the end of her rope. Her teenage daughter is doing very poorly in school and is even considering dropping out. Your neighbor's face turns serious as she seeks your advice, "What can I do? How can I motivate my daughter?" After reading and reflecting on 15 chapters in a book entitled *Understanding Motivation and Emotion*, it has come down to this—to a knock on the door and the distressed face of a concerned parent. What can you recommend?

Would offering her a monetary incentive for good grades or for continued attendance be a good strategy? This is a popular strategy, but is it a good enough strategy that you would recommend it? Should the mother try to boost the daughter's self-esteem? What about suggesting that your neighbor talk to her daughter about school and what it means to her? The conversation could explore the daughter's interests and goals, about her sense of competence in school, about her future and the possible selves she embraces for herself, or about whether school can or cannot help her become the person she wants to become. Or, the conversation might focus on the

quality of the relationships she has with her teachers. Would this be a good strategy? Can you suggest something better? You see before you a real motivational problem that is affecting the lives of people you care about, and you see the pain and confusion on the mother's face. She has not been able to solve the problem; can you help?

Understanding motivation and emotion is an important and worthwhile undertaking partly for its own sake and partly because it pays off. That is, motivation produces. If we can learn how to motivate students, then we can improve students' engagement during learning activities. If we can learn how to motivate employees, then their productivity and job satisfaction increase. If we can learn how to motivate athletes, then their skills develop and they are more likely to become lifelong participants in their sport. If physicians can learn how to motivate their patients, then health outcomes improve.

UNDERSTANDING AND APPLYING MOTIVATION

By now, you have gained some level of confidence in your own understanding of motivation and emotion. Just how much confidence you now possess likely depends on the extent to which you can do the following:

1. Explain why people do what they do.
2. Predict in advance how conditions will affect motivation and emotion.
3. Apply motivational principles to solve practical problems.

In the spirit of answering these three questions, this final chapter pursues three goals. The opening section checks on your understanding of motivation, asking questions such as, Can you explain motivation? Can you explain why we do what we do? Can you explain why we want what we want and fear what we fear? Can you predict changes in people's motivation before they occur? Can you forecast the conditions under which motivational and emotional states will rise and fall? Can you apply principles of motivation to help people solve the practical and everyday problems they face in their lives? Can you help empower others to improve their performances and to overcome their motivational deficits or vulnerabilities? The more you can answer these questions, the more you will be able to explain, predict, and apply motivational principles.

The middle section of the chapter adopts a very practical tone. Its pages ask you to apply your knowledge about motivation to the two-fold task of, first, motivating the self and, second, motivating others.

The final section concludes the book by offering a series of case studies to stir your imagination about trying to solve common motivational problems. The section also presents a series of success stories in which motivational psychologists have designed and implemented intervention programs to improve people's lives. The chapter (and book) comes to its close by outlining the wisdom that might be gained from a scientific study of motivation and emotion.

Explaining Motivation: Why We Do What We Do

Explaining the reasons for behavior—explaining why we do what we do—requires the ability to generate psychologically satisfying answers to questions such as, Why did he do that? Why does she want that? Why is he so afraid of or resistant against a particular course of action? Answers to these questions lie in understanding the source of motivation and how motives, once aroused, intensify, change, and fade.

To explain why we do what we do, Chapter 1 listed two dozen theories of motivation (see Table 1.5). Each theory provides a piece of the puzzle that is the grand effort to explain human wants, desires, fears, and strivings. Working down the list of theories in Table 1.5, for instance, achievement motivation theory explains why people sometimes react to a standard of excellence with positive emotion and approach behavior but other times show negative emotion and seek only to avoid it. Learned helplessness theory explains why people turn markedly passive and self-defeating when they are exposed to an environment in which they think offers them little or no personal control. Collectively, these theories address most of the circumstances in which the reader might be interested.

To explain motivational states, it helps to have an empirically validated and familiar motivation theory at your side. The theory will explain why a particular motivational phenomenon rises, persists, and declines, and which particular conditions in the person, in the social context, and in the culture affect the phenomenon in these ways. With such a theory in mind, it becomes easier to answer questions such as the following: Why do people set high goals for themselves? Why do people procrastinate when it is so obvious that there is work to be done? Why do people engage in risky behaviors such as parachute jumping or driving really fast? Why do separated friends go to so much trouble to keep in touch? Taken together, motivation theories provide a means of understanding and explaining why we do what we do and why we want what we want.

Predicting Motivation: Identifying Antecedents

Motivation study pays close attention to the conditions that give rise to motivational and emotional states, asking questions such as, Which antecedent conditions energize and direct behavior? An understanding of motivation and emotion includes the ability to predict what effect various environmental, interpersonal, intrapsychic, and physiological conditions will have on motivation and emotion.

Consider the motivational implications of the following events. What are some expected motivational implications of being exposed to a highly competent role model? What implications does such an observational experience have for an elementary grade student who watches a peer solve math problems on the chalkboard? What about for a company salesperson who watches her supervisor interact smoothly and flawlessly with clients? What about for an athlete who watches a video-recorded performance of a champion performer? For the fourth-grade math student, the corporate employee, and the aspiring athlete, what effect will an exposure to an expert model have on their self-efficacy? On their goal setting? On their sense of mastery versus helplessness? On the possible selves they might embrace? On their capacity for autonomous self-regulation? On their achievement motivation? On their self-actualizing tendency? On their positive emotionality?

Test yourself on a few antecedents covered in the earlier chapters. For each antecedent, check whether or not a helpful theory comes to mind that allows you to offer a confident prediction as to what effect that condition might have on a person's motivation:

- 24 hours of deprivation (from food, people)
- presence of a warm, genuine, and empathic friend who listens carefully
- cultural pressures (e.g., toward thinness or high grades)
- a choice of what to do
- an expected, tangible reward (e.g., money)
- a standard of excellence
- unresponsive, uncontrollable environments
- autonomy-supportive teacher
- feedback about one's goal-directed performance
- an obstacle to one's plans that seems illegitimate or unjust

Applying Motivation: Solving Problems

The more you understand the principles of motivation and emotion, the greater will become your capacity to find workable solutions to real-world motivational problems. Solving motivational problems means empowering people toward more intentional action, optimal experience, positive functioning, and healthy development, and away from impulsive action, habitual experience, counterproductive functioning, and avoidance.

The two questions that define the effort to apply motivational principles are, "How do I motivate myself?" and "How do I motivate others?" Motivationally empowering self and others involves amplifying strengths and repairing weaknesses. Amplifying strengths involves nurturing, supporting, and developing motivational resources so that people can use these resources to improve their functioning. Repairing weaknesses involves reversing motivational deficits that get in the way of, or outright hinder, positive functioning.

Consider first the effort to amplify strengths and improve functioning—to increase effort in school, performance in athletics, productivity at work, resiliency in therapy, personal growth in old age, and so on. Each chapter provided some insight into the practical task of amplifying strengths, but here are some reminders. Quiz yourself again, this time by asking what could I do to promote the following 10 motivational states in myself and in others?

- promote resilient self-efficacy beliefs
- cultivate personal autonomy
- set up conditions that promote the flow experience
- nurture growth needs and become a fully functioning individual
- develop a mastery motivational orientation
- set difficult, specific goals

- encourage mastery goals over performance goals
- encourage incremental theories over entity theories
- encourage differentiation and integration of the self
- nurture mature ego development

Consider, second, the effort to repair weaknesses and overcome pathology—student apathy, achievement anxiety, helplessness, depression, immature coping strategies, challenge avoidance, worker absenteeism, breakdowns in relationships, and breakdowns in regulation such as ignoring physiological cues for hunger or personal preferences for what one wants to do. Again, each chapter provided some insight into the effort to repair weaknesses and reverse vulnerabilities, but here are some reminders. Test yourself one final time by asking what could I do to overcome the following 10 motivational pathologies in myself and in others?

- redefine the meaning of failure and cultivate a constructive response to it
- avoid the hidden costs of reward
- reverse the restraint release that leads to binge eating
- prevent helplessness and its deficits
- challenge entity thinking so as to find the value in effort
- reverse pessimistic expectancies and explanatory styles
- overcome addictions
- solve the paradox of thought suppression
- identify immature defense mechanisms and find the courage to give them up
- identify fear-dominated decision making and build the personal resources to render it unnecessary

MOTIVATING SELF AND OTHERS

Much of the appeal in studying motivation lies in its potential to speak to motivating ourselves and others. We want to promote effort, achievement, challenge seeking, and excellence in self, and we want to promote these same outcomes for those who are important to us. We also want to help self and others reverse and overcome pessimism, anxiety, doubt, worry, hesitancy, and helplessness.

Motivating Self

Imagine that you cannot generate within yourself the motivation to study, exercise, or practice. How do you generate a sense of initiative within yourself? Or, imagine that you cannot stop yourself from smoking, eating, or coping in an angry-hostile way. How do you cultivate a sense of restraint within yourself? As one illustration, consider suffering through the motivational problem of hesitancy, procrastination, or outright avoidance in not really wanting to practice a skill, such as playing the piano. How does one nurture engagement-fostering needs, cognitions, and emotions? How does one surround oneself with engagement-fostering environments and supportive interpersonal relationships?

In terms of needs, energy and direction might arise from a perception of competence or a need for achievement but might fall from a perception of incompetence and the fear of failure. In terms of cognition, energy and direction might arise from self-efficacy beliefs, mastery goals, or an optimistic explanatory style but might fall from doubt, a performance-avoidance goal, and a pessimistic explanatory style. In terms of emotion, energy and direction might arise from interest, joy, and hope but fall from fear, sadness, and embarrassment. In terms of environments and relationships, energy and direction might arise from the challenge of a competition or from the listening and explanatory rationales of an autonomy-supportive teacher but might fall from a critical audience or from the directives and commands from a controlling teacher.

The effort to motivating the self, therefore, is to undertake a critical examination to diagnose potentials and deficits in one's current needs, cognitions, emotions, environmental surroundings, and interpersonal relationships. For instance, does playing the piano adequately challenge and involve one's competence need, or does it generally induce an experience of apathy or anxiety? Is one's piano-playing associated with expectations of efficacy, flow, and personal control, or with expectations of being overwhelmed by the experience? Is it an interesting, important, and identity-confirming thing to do? While playing or while thinking about playing in the future, does one feel mostly interest and joy or anger and resentment? As one plays, how do the people around you respond—are they supportive or demanding and pushy? If one can diagnose why approach motivation is low or why avoidance motivation is high, then constructive steps can be made toward solving the motivational problems and deficits one currently faces.

The effort to motivate self and the effort to motivate others differ in some important ways. Figure 16.1 shows that all efforts to motivate involve the introduction and management of supportive environmental conditions, including the offering of optimal challenges, informational feedback, and interesting things to do (line b). What is unique about motivating the self, however, is the lifelong task of developing inner motivational resources, as shown in Figure 16.1's line a. What is unique about motivating others is the offering of high-quality interpersonal relationships (i.e., developing outer motivational resources), as shown in Figure 16.1's line c.

Cultivating inner motivational resources involves the developmental effort to build effective motivation, strong and resilient self-efficacy beliefs, a mastery motivational orientation, robust personal control beliefs, achievement strivings, a healthy sense of self and identity, sense of competence, an autonomy causality orientation, mature defense mechanisms, goal-setting capacities, self-regulation abilities, interests and preferences, an optimistic explanatory style, and build and broaden one's capacity for positive affect. Developing inner motivational resources means growing optimistic, engagement-fostering, and approach-oriented needs, cognitions, and emotions. The more one cultivates and develops strong, resilient, and productive inner motivational resources over the life span, the more frequently he or she will experience strong, resilient, and productive motivational states in a given situation (see line a in Figure 16.1). For instance, when taking a foreign-language class in college, it would be time well spent if the student created a relevant possible self (e.g., "traveler" or "future high school Spanish teacher"), implemented a mastery model program (to build self-efficacy) or a goal-setting program, or sought out an autonomy-supportive (rather than a controlling) teacher.

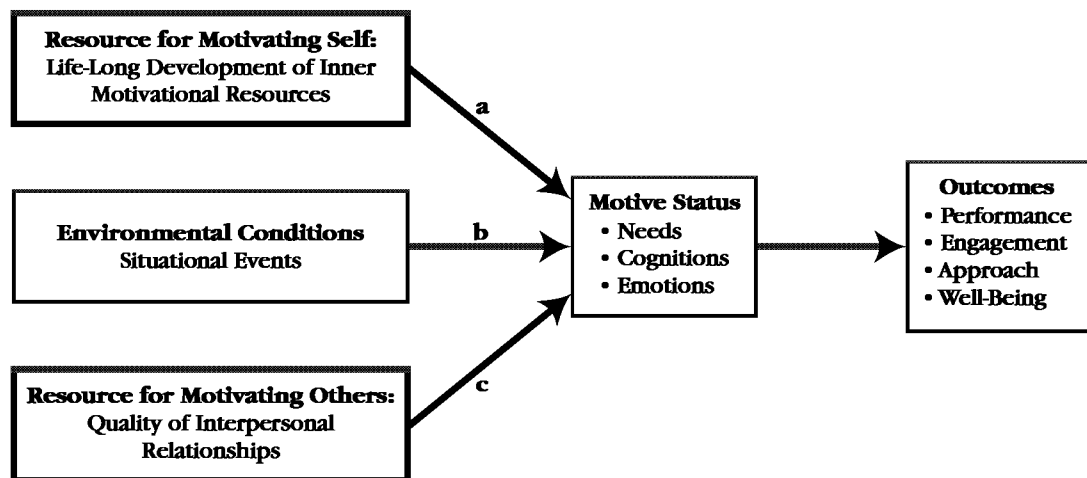


Figure 16.1 Framework to Think about Motivating Self (Line “a”) and Motivating Others (Line “c”)

Given the motivational benefits of inner motivational resources, consider trying to solve the motivational problem of a fear of public speaking that motivates avoidance behavior. Part of the problem can be understood in the situation’s environmental conditions (line b in Figure 16.1), as might be the case if one faces a hostile, critical, controlling, or competitive audience. So part of the problem can be found in the environment or in the person’s perception of the environment. That notwithstanding, the presence of inner motivational resources can support a speaker’s motivation even in the face of a nonsupportive environment. People can build within themselves strong efficacy beliefs that can silence their doubt and anxiety. People can learn to leave behind their performance-avoidance goals (“During your speech, don’t forget your lines”) and adopt performance-approach goals (“During your speech, communicate three main points”). And people can learn to embrace incremental theories about their public-speaking abilities to counter and replace their entity beliefs that leave them vulnerable to patterns of avoidance when things go wrong. So when people set goals, encounter failure feedback, or need to marshal great effort to face the challenges in their lives, it helps if they have an ally in the form of inner motivational resources to create a sense of purpose, buffer stress, silence doubt, and maintain positive emotionality.

The key to motivating self is the lifelong undertaking to cultivate a reservoir of productive inner motivational resources. From this point of view, much of the effort to motivate the self today becomes the ongoing effort to figure out how to nurture inner motivational resources within oneself. Motivating the self is therefore as much a developmental undertaking as it is a daily problem-solving effort.

Motivating Others

What is unique about motivating others is that the person facing a motivational problem does so within the context of an interpersonal relationship, as shown in line c in

Figure 16.1. As one person attempts to motivate another, the person being motivated reacts in one of three prototypical ways—namely, passively, aggressively, or constructively (deCharms, 1987). Repeated interactions between the motivator and motivatee teaches the person who is trying to solve his or her motivational problem either (1) the passivity of amotivation and learned helplessness, (2) the aggressive negativity of stubborn reactance when others try to shape or control his or her thoughts and behaviors, or (3) the constructive cooperative effort of learning new ways of thinking, feeling, and behaving that change one's situation for the better.

The first two outcomes within the motivator–motivatee relationship are negative, as they pit motivatee against motivator. The third outcome of the relationship is positive and places the person into a constructive and truly cooperative relationship between motivator and motivatee. With the third outcome, the person learns how to solve his or her own motivational problem, how to build his or her own skills, how to originate and initiate his or her own actions, but he or she does so with the help and guidance of another. In this way, he learns personal causation. Alternatively, manifestations of passivity or aggressive reactivity are tell-tale signs that the relationship is making the person's motivational problem worse, not better (deCharms, 1987).

Most attempts to motivate others take place within the context of a relationship that involves some interpersonal power differential between the motivator and the person being motivated (Deci & Ryan, 1987). For example, consider the following interpersonal relationships in which the first person has some responsibility for motivating the other: teachers motivating students, parents motivating children, employers motivating employees, doctors motivating patients, therapists motivating clients, coaches motivating athletes, clergy motivating parishioners, experts motivating novices, and therapists motivating clients.

In each relationship the first person has some influence over the second, whether the basis of that influence manifests itself in expertise, rewards, status, or position. Consequently, the person who is one down in the relationship is vulnerable to being controlled or bossed around by the person who is one up in power. Controlling and bossing other people generally produces patterns of motivation that can be characterized as the passivity of helplessness or the aggressive negativity of reactance. This directive, take-charge approach to motivating others can be seen in military leaders, hard-line employers, extremely competitive athletic coaches, controlling teachers, take-charge politicians, authoritarian parents, and patronizing doctors.

Those who productively motivate others focus relatively little on the outcome to be attained (high grades, meeting a sales quote, winning the championship), but relatively much on the quality of the relationship being offered. In almost every chapter of the book, the key resource in helping generate constructive motivation in another person was the offering of an empowering, need-satisfying, identity-confirming, positive affect-inducing, nonjudgmental, and growth-promoting relationship the other person could use as a means of coming to understand and eventually solving the motivational problem they faced. In motivating others, what the other person needs for positive functioning is not so much a solution that will make the problem go away as it is the availability of another person who provides (1) a hint as to how one might get unstuck in the ongoing effort to make personal progress and (2) support and affirmation of one's capacity for self-determination and autonomous self-regulation. In this way, a caring

relationship functions as one's conduit to more adaptive ways of thinking, feeling, and behaving.

Given this introduction, it is helpful to ask two questions when trying to motivate others: (1) Who is motivating the person? and (2) Is the social context supporting the person's personal causation and inner motivational resources, or is it robbing this person of these vital assets?

As to the first question, the motivator will be either the person him- or herself, or it will be some outside force, such as a supervisor, coach, or cultural message for happiness. The second question presents any interpersonal relationship as a two-edged sword that might either support and enhance versus frustrate and undermine the person's motivation. These two questions point to the conclusion that, in the art and practice of motivating others, the primary goal is not to produce compliance or a predetermined pattern of desired behavior in the other but, instead is to enhance the other's capacity for effective personal causation.

Feedback on How the Effort to Motivate Self and Others Is Going

Fostering initiative, agency, and personal causation in self and others is as much an art as it is a science. But, even artists need feedback. Ongoing changes in emotion, behavior, and well-being make for excellent sources of feedback.

Emotions read out the status of a person's motivational status, as discussed in Chapter 11. When you engage in an activity and feel interest, enjoyment, enthusiasm, and optimism, things are going well, motivationally speaking; when you feel apathy, anger, and pessimism, then things are going poorly. Similarly, when you see interest, enjoyment, enthusiasm, and optimism in those you try to motivate, your effort to motivate others is likely going well; and when you see apathy, anger, and pessimism in those you try to motivate, your effort to motivate others is likely going poorly.

In terms of behavior, the extent of a person's initiative, approach-orientation, effort, persistence, resiliency in the face of challenge or failure, facial and gestural expressiveness, on-task attention, goal-directedness, extent of voice and participation, and (absence of) procrastination communicate the quality of one's underlying motivation.

Changes in vitality and well-being also signal motivational progress and growth versus motivational stagnation and defensiveness. Motives energize and direct our behavior, so changes in vitality and well-being express how well or how poorly our motivational states are being involved and satisfied in any given situation. When one monitors another's emotionality, behavior, and psychological well-being, much of the mystery underlying the question, "How is my effort to motivate others going?" disappears.

DESIGNING MOTIVATIONAL INTERVENTIONS

After 15 chapters, I hope you will agree that those who study motivation and emotion know a lot and have a lot to offer. These researchers collectively devote an enormous amount of time and energy to developing, testing, and refining ever-more sophisticated theories of motivation. That is fine, but to many people the real payoff of motivation study is using that knowledge to improve people's lives. This section discusses several success

stories of how those who study motivation have designed and implemented successful motivational interventions to improve people's lives in important ways.

Before looking at some of these success stories, however, it helps to take a step back and recognize just how difficult and precarious it can be to translate advances in scientific knowledge into practical improvements that change people's lives for the better. Consider the sorry success rate of medical research, for instance. Researchers have developed a successful vaccine for Alzheimer's disease in rats. They have enabled paralyzed rats with severe spinal cord injuries to walk again. And, they have cured an impressive range of different types of cancer in laboratory rats. Still, for humans, there is no cure for Alzheimer's disease, spinal cord injury, or cancer not to mention multiple sclerosis, Parkinson's disease, osteoporosis, cystic fibrosis, and so on. Many valid reasons exist to explain the gap between gains in theoretical understanding and success in practical applications of that knowledge, but the point is that practical application of theoretical knowledge is not something one can take for granted. The lesson is that, while it is crucial for a successful intervention to be well grounded within a theoretical framework (Wentzel & Wigfield, 2007), it is still true that designing effective motivational interventions typically takes the same amount and quality of time and effort as did the original theoretical development that preceded it.

When you began reading this book, you likely did so with a sort of implicit agreement that if you labored through 450 pages of text, then, in the end, all this effort would pay off because you would gain some practical, real-world strategies to cope successfully with the motivational problems you cared about most. Fortunately, motivation researchers have been largely successful in their efforts to translate their theories into solutions, though this has been true only in the last decade or so.

Below are several case studies to spark your imagination of the motivational problems people face. The case studies are followed by four success stories in which those who study motivation have successfully applied their ideas to solve important motivational problems.

Four Case Studies

Consider the four case studies featured in Box 16. In each case, a person faces a different motivational issue. The child at home finds it difficult to generate the motivation she needs to engage in an uninteresting, devalued course of action. The salesperson faces the challenge of maintaining her confidence, interest, optimism, and hope in the face of frequent failure and potential burnout. The athlete wants to develop talent and enhance performance, but is having a difficult time doing so. The patient faces the difficult, energy-demanding task of initiating and maintaining a lifestyle change.

In reading each case study, attempt to accomplish the three objectives listed in the beginning of this chapter—namely, explaining motivation, predicting motivation, and applying motivation. First, attempt to diagnose why the person is currently experiencing that particular motivational experience. You will not, of course, have access to the important details of his or her situation, but you can still generate a number of possible hypotheses to explain why the person is experiencing that level of motivation and that type of motivation. Second, once you have a couple of hypotheses to work with,

BOX 16

identify the key sources of the person's motivation. What conditions could affect the person's motivation? Third, apply your knowledge of motivation to generate a productive course of action for each person to help them better generate the energy and direction they need in their day-to-day behavior to solve the motivation issue. Make a plan of action as to how you will assess changes and improvements in the person's motivation, emotion, behavior, and well-being. As you read each case study and think about the person's needs, cognitions, emotions, environmental circumstances, and interpersonal relationships, recall the contents of the previous 15 chapters. Also, think about the larger developmental goals of building and amplifying strengths and also repairing weaknesses and reversing deficits.

Four Success Stories

If you look for them, you will see several attempts to design motivational interventions around you each day. At a health club, for instance, you might see a poster like the one in Figure 16.2 hanging on the wall next to the treadmill machines. The poster,

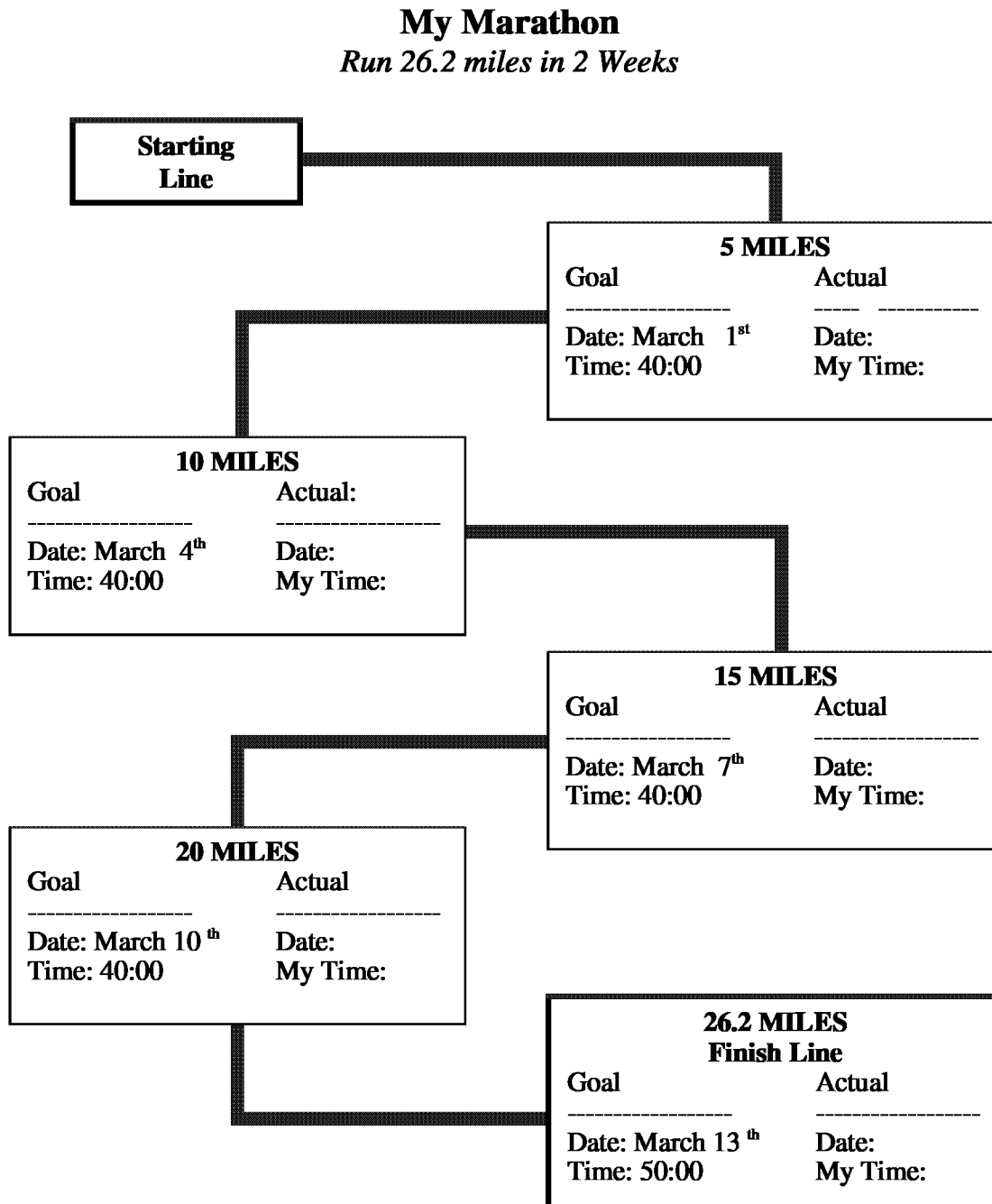


Figure 16.2 Motivational Poster to Encourage Goal Setting and the Expenditure of Effort

in effect, is inviting the would-be runner to hop on the treadmill and start exercising by pursuing a series of short-term goals (daily 5-mile runs) that lead to a larger, long-term goal (26.2 miles). Running “My Marathon” is an explicit goal-setting program. Its motivational purpose is to create in the would-be runner an intention to act, that is, an intention to run and also an intention to continue running for 26.2 total miles. A health-club member with an intention to act will be more motivated than a

health-club member with no such intention to act. No data exist to evaluate whether this poster actually produces a motivational effect, and this is true for most of the motivational interventions you will encounter. But researchers make the effort to test the effectiveness of their motivational interventions, and some of their findings appear below.

One such goal-setting intervention occurred in a work setting. Researchers concerned with boosting attendance worked with a group of employees to discuss ways to overcome the obstacles in their daily lives that were interfering with their ability to come to work (Frayne & Latham, 1987). During the intervention the employees set specific, difficult goals for their attendance, they discussed problem-solving strategies for how they might meet these goals, and attempts were made to improve employees' self-regulatory skills by monitoring ways in which their environment either helped or interfered with their attendance. Three months later, the employees' self-efficacy increased (as they become agents in exercising influence over their attendance behavior) as did their attendance, relative to a control group of workers who did not receive the intervention effort. A follow-up study showed that the increases in self-efficacy and attendance both continued 9 months later (Latham & Frayne, 1989). The positive effect of the motivational intervention had endured.

Attaining Personal Goals

In several studies, researchers worked with college students over the course of a semester to ask them to list several goals that they planned to strive for (Koestner, Lekes, Powers, & Chicoine, 2002). Some goals were academic (write a research paper), some goals were health related (sleep at least 8 hours each night), while other goals were social, fun related, or personal chores. Students also rated the extent to which each goal reflected their personal interests and values. Some students participated in an intervention program to set implementation intentions in which they specified a time and a place for pursuing their goal. They also developed self-management plans by identifying possible sources of distraction and a counter-behavior for each distractor. One woman who set the goal of reading *Paradise Lost* specified a time and place in which the reading would occur and identified her boyfriend and phone interruptions as possible distractors. Her counter-behaviors included scheduling to see her boyfriend later in the day, turning off the phone, and reminding herself how important it was to finish the book.

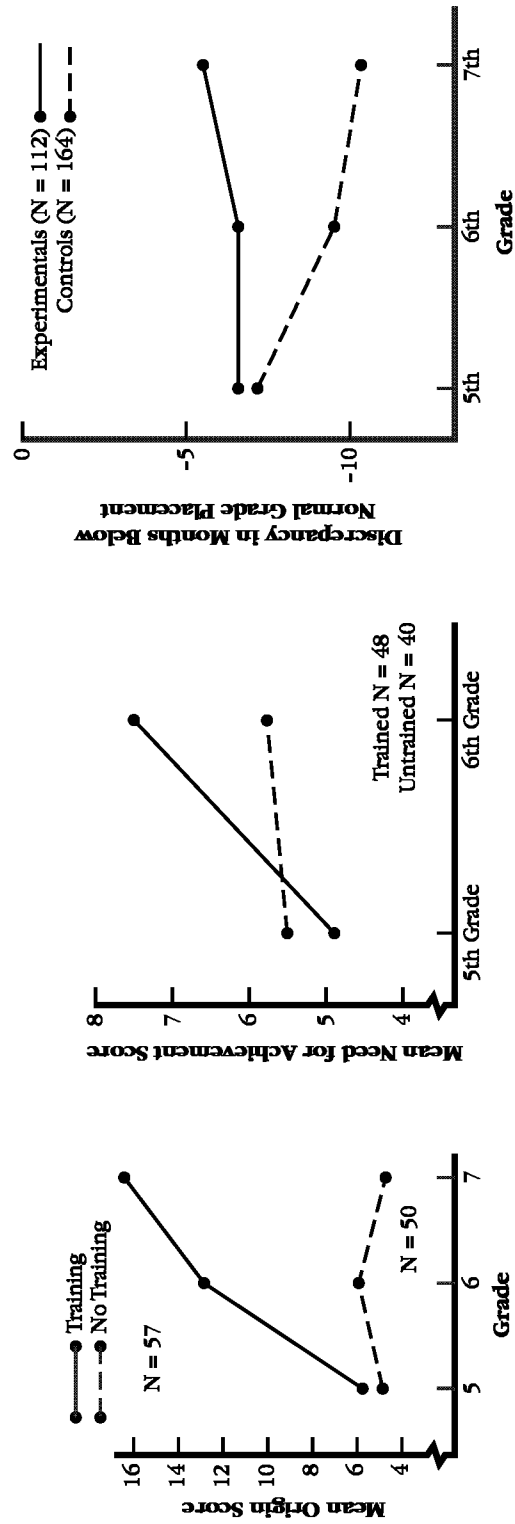
On their own, students completed about 62% of the goals they set for themselves. Students completed a significantly higher percentage of the goals that were high in self-concordance (those that reflected their personal interests and values). Most importantly, participants in the experimental group were especially likely to accomplish their self-concordant goals for which they set implementation intentions. Participants also reported rather strong positive affect and well-being upon accomplishing their self-concordant goals. Thus, the unique combination of having both self-concordant goals and clear implementation intentions to overcome obstacles and distractions resulted in especially high levels of goal progress and accomplishment (and also a corresponding boost in positive affect). This success story shows that all the knowledge researchers have gained in understanding goal-setting, personal strivings, self-determination theory,

and implementation intentions pays off by showing that people make maximal and emotionally satisfying progress toward personal goals when they work deliberately through not only what they want to accomplish (goals) but also why they are pursuing these particular goals (self-concordance) and how they plan to reach them (implementation intentions).

Motivating Students

In one school, students were attending relatively infrequently and their academic achievement was poor. A team of motivation researchers volunteered to spend several years at the school working with teachers to bolster students' motivational development. Teachers received a workshop experience and ongoing collaboration designed around the goal of promoting in their students a greater sense of "personal causation" (i.e., perceived autonomy, an internal perceived locus of causality) in regard to their schoolwork (deCharms, 1976, 1984). The workshop involved a variety of activities, discussions, and self-assessments. For instance, one activity was to highlight what it motivationally felt like to be an "origin" (high autonomy, an internal locus of causality) versus a "pawn" (low autonomy, an external locus of causality). In this activity, the teacher passed out sheets of paper with numbers and dots. For students, the task was to connect the dots. The picture was of a simple house on the left with a tree on the right. Acting in an authoritarian way, the teacher treated the students like pawns by telling them to pick up their pencils, connect dot #1 to dot #2, put down their pencils, pick up their pencils, connect dot #2 to dot #3, put down their pencils, pick up their pencils connect dot #3 to dot #4, and so on. After the exercise, the teacher discussed the pawn concept with the students. The teacher asked them to think about other times in which they acted like pawns or were treated like pawns, and the discussions often lasted for the remainder of the class period. Two days later, the teacher introduced the "connect the dots" exercise a second time. This time, students were encouraged to be creative. They were to connect the dots in any way and add color and details. When done, the students discussed the origin concept with their teacher. The discussion centered on autonomous motivation and on being personally responsible for one's own work.

Some teachers in the school were randomly assigned into the experimental group (to receive the motivational training) while others were assigned into the control group. Researchers tracked all students' motivational development, attendance, and academic achievement through the fifth, sixth, and seventh grades. Fifth-grade scores served as a baseline measure, and researchers expected to see origin-like changes emerge in the sixth and seventh grades. The effort to support students' motivational development was a success, as shown in children's greater personal causation (or perceived autonomy; see left panel in Figure 16.3), achievement motivation (see middle panel in Figure 16.3), attendance, and academic achievement (see right panel in Figure 16.3). Follow-up studies showed a beneficial long-term effect for these middle school students as significantly more of the students with participating teachers graduated from high school than did students with teachers who did not participate in the motivational training (deCharms, 1984). This success story shows that motivation is often rooted in interpersonal relationships with others, and also that researchers can translate their knowledge of how



6th and 7th Grade Training

Figure 16.3 Benefits to Students When their Teachers Promote their Motivational Development: Greater Personal Causation (left panel), Achievement Motivation (middle panel), and Academic Achievement (right panel)

Source: From "Enhancing Motivation: Change in the Classroom," by R. deCharms, 1976, New York: Irvington Publishers.



Mrs. Strong (pseudonym) and class (see Chapters 7 & 9)

to motivate others into classrooms capable on cultivating students' healthy motivational development.

Suppressing the Urge to Smoke

Most motivational interventions attempt to increase people's motivation. Some interventions, however, seek to decrease hyperactive motivational states that, because of their unusual intensity, are associated with unhealthy ways of behaving. Appetite and cravings, for instance, can lead people to smoke and continue to smoke over time. Smoking is an unhealthy way of behaving because about 420,000 people in the United States (and 5 million worldwide) die annually from various smoking-related diseases such as cancer, cardiovascular disease, and emphysema.

The motivational problem with smoking a cigarette is that nicotine produces a dopamine-induced feeling of reward. It can also energize a tired smoker, or it can relax a stressed one. It does this because when nicotine attaches to nicotine receptors in the brain, this event sends a message (to another part of the brain) to release dopamine. The effect is mild and short-lived, so it leaves the smoker craving additional nicotine. Knowing this, researchers developed a drug that attaches to nicotine receptors prior to smoking so that when the person smokes the inhaled nicotine has no open receptors to attach to and, hence, produce its rewarding effect. The drug (Chantix, or varenicline) blocks nicotine receptors but also provides an additional and low level of dopamine release to ease cravings. Experimental results showed that, after 12 weeks of taking the drug, participants felt a decreased urge to smoke, smoked less, and were more likely to abstain from smoking (44% in the experimental group vs. 18% in the control group).

Table 16.1 Parents' Attempt to Help Their Daughter Solve a Motivational Dilemma

Jennifer, 10 years old, has taken dance lessons since she was 4. In the fall, she announced to her parents that she was quitting dance in favor of team sports: basketball, softball, and soccer. "All my friends are playing on these teams," she told her father. "I'm tired of feeling left out."

Her parents anticipated a number of problems with this plan. First, Jennifer was not particularly good at team sports. On top of this, she was highly sensitive to the competitive aspects of sports. In other words, her feelings were often and easily hurt. Second, Jennifer had especially liked being in the limelight at dance recitals. Team sports would not provide such a loving showcase. Third, her parents had invested a great deal of time and money in dance lessons. Jennifer was finally getting good. It seemed an inopportune time to quit.

How could they handle this? Should they force Jennifer to continue dance because she had invested so much and could easily see how much Jennifer was giving up? What was best for their daughter?

Jennifer's mother, weighing all these complex issues, talked with her daughter about the possible consequences of quitting dance. She stressed, however, that the ultimate decision was Jennifer's. Jennifer stuck to her decision. She opted for sports. Although she was by no means a star, she made great progress in handling the competition and the inevitable disappointments. Her parents supported her at events and picked up the pieces when she was upset at the end of a losing game. Jennifer learned to persevere.

In late spring, much to her parent's surprise, Jennifer announced that she would like to dance again. She might continue in a team sport or two, but not as intensely. Her parents bit their tongues. There weren't any "I told you so's."

Source: Grolnick, W. S. (2003). *The psychology of parental control: How well-meant parenting backfires*. Mahwah, N.J.: Lawrence Erlbaum.

This success story shows that all the knowledge researchers have gained in understanding the motivated and emotional brain (Chapter 3) are beginning to pay off in important and literally life-changing and health-promoting ways.

Autonomy-Supportive Parenting

The final success story is not a research investigation but, instead, a parent's story (Grolnick, 2003). Table 16.1 tells the story of how two parents negotiated the tricky task of supporting their daughter's motivational strivings during a difficult period. Common sense and popular books on parenting lead to advice like leading children down the path of optimal development with a take-charge controlling approach that uses attention-getting tools such as extrinsic rewards and wallcharts. Instead, what these parents did was acknowledge their daughter's feelings. They did not take control of the situation and impose their more experienced will on their daughter.

In brief, what these parents did right in motivating their daughter was that they supported her autonomy. In doing so, they successfully sidestepped the two great pitfalls in motivating others by keeping at bay their daughter's amotivation/learned helplessness and aggressive reactance against the parents' intervention effort. They were able to motivate their daughter by providing a relationship that supported and affirmed their daughter's capacity for self-determination and autonomous self-regulation.

On a larger level, the parents were able to do something more—something I hope the reader will also be able to do in the years to come. The parents used their deep understanding of motivation to help inform their understanding about what motivates their daughter. With this knowledge, they constructed an effective approach to motivating another person, their daughter.

WISDOM GAINED FROM A SCIENTIFIC STUDY OF MOTIVATION AND EMOTION

The previous four hundred and fifty pages have reported a barage of theories, facts, and empirical findings. In this final section of the book, it is time to go beyond the collection of knowledge and begin to integrate and use that information. It is time to reflect and draw out the wisdom that might be gained from four hundred and fifty pages of trying to understand motivation and emotion. Here I list 6 pearls of wisdom—one extracted from each of the 16 chapters. Your own reflection might lead you to generate a different list, but I hope the mere effort to generate such a list will help open the door to seeing, understanding, and appreciating the wider implications of motivation and emotion study.

1. Human nature can be discovered using scientific methods.
2. What we don't know about motivation and emotion exceeds what we do know.
3. The brain is as much about motivation and emotion as it is about cognition and thinking.
4. We routinely underestimate how powerful a motivational force biological urges can be when we are currently not experiencing them.
5. The quality of one's motivation matters as much as does its quantity.
6. To flourish, motivation needs supportive conditions, especially supportive relationships.
7. We share many of the same needs, while other needs are acquired through experience.
8. We do not do our best when we "try to do our best"; rather, we do our best when we pursue a difficult, specific goal.
9. The cognitive pillars of motivated action are "I can do it" and "It will work."
10. Boosting self-esteem is a poor motivational strategy.
11. All emotions are good.
12. Emotions are biological, cognitive, and social reactions to the important events in our life.
13. Happiness lies in our genes and in what we choose to strive for.
14. We are not always consciously aware of the motivational basis of our behavior.
15. Encouraging growth is more productive than is trying to cure weakness.
16. There is nothing so practical as a good theory.

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